HEALTH BUILDING NOTE 41

MC0154

Accommodation for Staff Changing and Storage of Uniforms

DEPARTMENT OF HEALTH AND SOCIAL SECURITY
and the WELSH OFFICE

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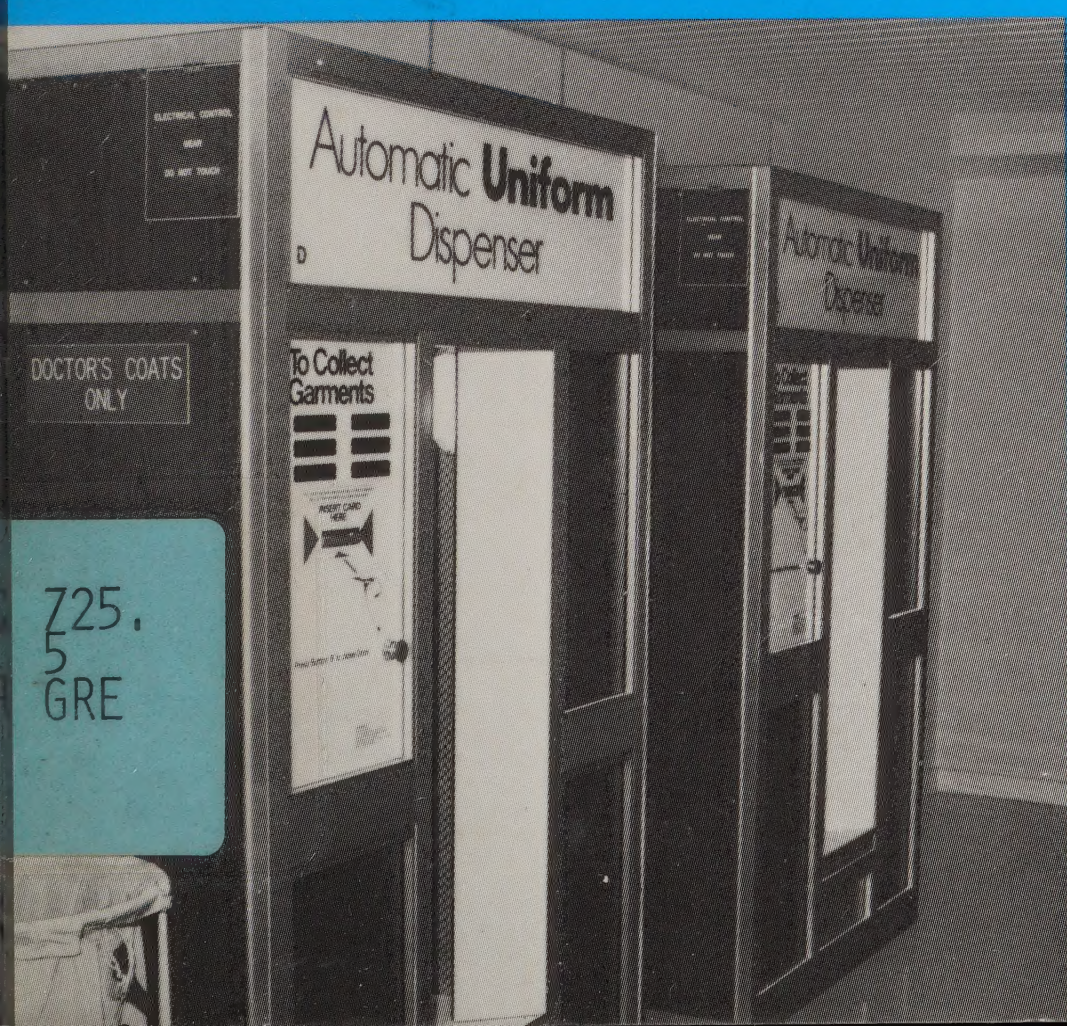

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Health Building Notes

Health Building Notes are intended for use in the briefing and design stages of projects to assist those concerned with the provision and design of new health buildings and the adaptation or extension of existing premises. The Notes contain information on the relevant aspects of current policy, the functional requirements and resultant design implications. Their objective is to provide standards of accommodation that are economically consistent with the functional requirements and a Departmental Cost Allowance that is directly related to these standards.

A flexible approach is adopted in the Notes. Optional solutions with cost implications are indicated, where appropriate, leaving local planners to make their own choice, having regard to overall cost limits. The general approach is to identify functions, activities, equipment needs and those dimensions which are critical to the efficient performance of an activity, but not to relate functions to specific or preconceived floor areas.

A feature of the Notes is the reference to Activity Data sheets (Chapter 5), which provide the detailed user requirements for each room or space.

To avoid repetition, guidance on spaces that commonly occur in health buildings has been brought together in a Health Building Note entitled "Common Activity Spaces" to which reference is made, where appropriate, in each Note. At the time of writing a draft of the Common Activity Spaces HBN has been made available to NHS Authorities.

The Notes are prepared in consultation with representatives from the NHS and appropriate professional bodies concerned with, or having a specific interest in, their content.

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1 General considerations

1.1 This Health Building Note (HBN) deals with the requirements for staff changing and for the storage and issue of uniforms. The term "uniform", wherever it appears in this Note, also includes protective clothing; for example, working clothes for domestic staff, white coats for medical staff etc. This Note replaces those parts of Hospital Building Note 18 Administrative Department (published April 1963, reprinted 1972) which relate to staff changing accommodation, but not paragraph 41 of HBN 18 which deals with medical staff. The information relates to the requirements for a district general hospital (DGH) but it will also be appropriate for other hospitals and health buildings.

1.2 Hospitals should make reasonable provision for changing facilities for all their staff. The availability of clean uniforms for all appropriate staff will encourage professional morale and promote patient confidence. This Note concentrates upon the functional and design requirements for the provision of central changing accommodation and a central uniform issue point to serve hospital requirements. Certain hospital departments will have facilities within the department because of the nature of the work or to suit local circumstances. Guidance is therefore given on the general requirements for local changing facilities but not those for individual departments, which will be provided in the appropriate HBN.

1.3 Storage systems for personal clothes and uniforms at present vary from simple hanging baskets for clothes and shelves for uniforms to fully automatic systems. This Note gives guidance for three systems – manual, semi-automatic and fully automatic. Authorities are urged when considering requirements in relation to new or upgrading situations, to follow the recommendations in this Note for the system which will, in their circumstances, provide the best service coupled with the most economical balance of capital and running costs. The capital and running costs of all proposals should be fully investigated.

Content of the guidance

1.4 This Note gives guidance on the requirements for the organisation, planning and design of:

a. centralised accommodation for changing comprising space and facilities for the storage of personal clothing, changing and sanitary needs;

b. centralised provision within the accommodation for the storage and issue of uniforms for all staff who are required to change into uniform;

c. local changing facilities (general requirements).

1.5 Detailed information is not given for:

a. the requirements of hospital departments such as operating and pathology which need to have their own facilities for changing etc because of the nature of their work (guidance will be provided in the relevant HBN);

b. changing accommodation for resident staff (1.33)

However reference is made to these aspects if they affect any matters relevant to the guidance in general.

1.6 The extent to which disabled staff use central facilities will depend upon local circumstances: this Note makes provision for a WC for wheelchair users. (2.59) Planners and designers should ensure that the circulation space is adequate for the movement of persons in wheelchairs.

Range of provision

1.7 Guidance is provided on the facilities required for staff changing and for the storage of personal clothing and uniforms for a range of 300 – 1200 places and for the issue of uniforms to the majority of hospital staff on a central basis. In this context a place is equal to each member of the staff, whether working whole or part-time, who requires to use the changing facilities with storage space for personal clothes and uniforms in centralised accommodation.

Adaptation of existing accommodation

1.8 For simplicity, the guidance is directed towards the provision of new accommodation but it is relevant also to the adaptation of existing premises. The standards set out in this guidance apply to provision by new building and it is not intended that they should be applied retrospectively to existing stock. However, the principles are equally valid and should be applied so far as is reasonably practicable when existing departments are being upgraded or a new department is being constructed within an existing building previously used for other purposes. In such cases the aim should be to meet building work standards whenever possible although it is recognised that compromises will inevitably have to be made.

1.9 The cost of upgrading work should conform to the guidelines indicated in the Department's WKO letter (81)4 issued on 24 July 1981. These guidelines take into consideration the estimated life of the existing building and the difference in cost between an upgraded building and a new building.

1.10 When comparing the cost of upgrading or adapting an existing building to that of new building, in addition

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Uniforms registered at a central point for sorting and distribution

to the building cost, due allowance must be made for the cost of relocating patients and staff, demolition and salvage costs, relocation of services to other parts during a phased project, and the temporary effects on running costs of any impaired functioning of areas affected by upgrading.

Uniforms and laundry

1.11 Storage facilities need to be considered and planned having regard to the policy for linen handling, particularly the frequency of laundry deliveries. Storage problems can be created in changing accommodation because of a change in laundry turn-round times and methods of packaging.

1.12 Where laundry services are off-site it is usual practice for all linen, including staff uniforms, to be received at a central point prior to initial sorting and distribution within the hospital. Where laundry services are on-site it is increasingly common for this initial sorting to be undertaken in the laundry.

1.13 After sorting, staff uniforms will normally be transported to a uniform issue area either on hangers on mobile racks or folded and placed in containers depending on the laundry process. The practice of sorting uniforms into personal bags or boxes is declining and is not provided for in this Note.

1.14 It is a matter for local decision, having regard to the efficiency of the local laundry service and user acceptability, whether uniforms should be issued on a personal or some other basis. Where there is a personal issue the number of uniforms supplied will depend upon the turn-round capacity of the laundry service, the nature of the person's job and whether it is full-time or part-time.

1.15 Consideration will need to be given locally to which uniforms are suitable for issue in automatic dispensers (eg nurses' uniforms, white coats) and those which may not be suitable (eg protective clothing worn by engineering or laboratory staff).

Medical staff

1.16 This Note does not attempt to provide any particular solution as to how Authorities should meet the needs of male and female medical staff for the storage and issue of white coats or for the secure storage of personal clothing. Solutions will need to relate to local circumstances. As examples, personal clothing can be stored in offices, in the doctors' offices associated with nursing sections, in association with the medical common room – see Hospital Building Note 18 (paragraph 41), – or where convenient, in a postgraduate medical education centre or in the appropriate part of accommodation being used for education on a multi-disciplinary basis. It should be remembered that both male and female docotors will require secure storage for personal items whether by full-length or small security lockers; full-length lockers should be large enough to take top coats and briefcases. A trolley service might be possible for the issue of white coats on a personal basis to different parts of the hospital eg Out-Patient Department (OPD) or nursing sections (wards).

1.17 It would probably be impracticable for consultants and other medical staff to use central accommodation because of the need to answer medical calls elsewhere or to go out at short notice. There should be full consultation with appropriate medical interests about the provision of facilities. In the event of some medical staff wishing to make use of central facilities account must be taken of this at an early planning stage.

Local facilities

1.18 Local changing means the provision of full facilities at individual places of employment within the hospital where clothing can be stored and where staff can change into uniform or other protective clothing and use sanitary facilities. As nurses form about half of the staff needing to use changing accommodation a decision about whether nurses are to change centrally or at nursing section level will have a marked effect on the scale of any centralised accommodation to be provided. Staff who do not use central facilities and who do not require full local changing facilities will require provision at their work station for secure storage of personal belongings; small lockers should be provided if there is no other means of secure storage. There may also be a need to make some additional provision for temporary users eg students. Where staff use central facilities it will also be necessary to make provision at their work station for the secure storage of personal belongings.

1.19 Information is provided in this Note for both limited and full facilities at nursing section level and for other areas. (2.69 – 2.73) It is assumed that uniform storage and issue with any appropriate recording procedures if necessary will be provided centrally for all staff insofar as this is practicable and convenient in relation to the design and size of the hospital.

Central Facilities

Purpose of centralised accommodation

1.20 There are a number of advantages in centralising facilities for changing and the storing and issuing of uniforms. There is easier administrative control of uniform issue and clothes storage with greater flexibility in the use of changing accommodation; the facilities are more appropriate for compact high density buildings; there is greater tidiness in the rest of the hospital and economies in capital and running costs can result.

1.21 It is therefore recommended that facilities should be centralised as far as is compatible with the needs of staff, the administration of the service, and economy in relation to capital and running costs.

1.22 Central facilities for changing and for storage and issue of uniforms should be provided for staff who have to wear uniforms (including protective clothing) whilst at work and for other staff who do not have convenient facilities at their place of work to hang outdoor clothes. Within the central changing area there should be separate accommodation for female and male staff but not usually for different grades of categories of staff. There may however be instances where because of local factors the provision of further separate accommodation for staff is considered appropriate.

1.23 If a hospital is scattered over a large site or there are blocks of accommodation within a large development or if large numbers of staff are involved it may be necessary to divide the facilities into a number of separate areas each located for convenient use by staff. The use of automatic systems enables this to be carried out more easily but local factors need to be taken into account when dividing accommodation in this way. A full assessment of the implications should be made in terms of capital and running costs particularly having regard to the possible duplication of equipment and sanitary facilities.

1.24 The categories of staff who in accordance with local requirements could use central facilities are:

a. female and male nursing staff;

b. male and female medical staff (but see paragraph 1.16);

c. other professional and technical staff for whom local facilities are not provided;

d. female and male ancillary and domestic staff.

Location

1.25 Central changing accommodation should be situated close to the hospital entrance used by most staff. Staff should not have to go unduly out of their way in order to reach the changing area. Bad siting is likely to lead to under use of any accommodation provided and to a consequent development of ad hoc changing arrangements resulting in poor hygiene and an increase in security risks. The location of the changing accommodation needs to be considered in relation to the general pattern of perimeter access, parking and public transport and the hospital entrances. Staff changing accommodation can present a high fire risk, particularly if for long periods it is left unsupervised. Consequently, the location of central staff changing facilities below a high life risk area, eg nursing sections and operating suites, should be avoided wherever possible. If there is no practical alternative, then any area containing open clothes hanging should be enclosed in half-hour fire-resisting construction additional to the half-hour fire-resisting enclosure of the whole accommodation. Fenestration to the open clothes hanging area should not occur below fenestration or any other opening to a high life-risk area on the storey immediately above. See also paragraph 1.43 regarding fire safety considerations.

1.26 Reasonable access is required to the uniform storage point from the external entrance where the collection and delivery of uniforms will take place.

1.27 The problems involved in a phased development must be carefully considered in order to ensure that:

a. the centralised accommodation is correctly situated in relation to the whole hospital, irrespective of the phase in which it is built;

b. if the centralised accommodation is to be built in a later phase, staff changing facilities need to be available to meet the requirements in the earlier phase, or phases, pending completion of the main accommodation.

1.28 There are also problems in phasing requirements for the changing accommodation itself. It would not be economically viable to provide and run accommodation excessive to actual immediate needs but intended to serve a later phase of the whole hospital. Any expansion should be capable of being carried out with the minimum disruption to existing accommodation. Careful planning of subsequent building work should avoid the need for workmen to pass through the changing area in use.

1.29 The provision and siting of any clocking-in point will be a matter for decision in accordance with hospital policies. The best situation may be near the hospital entrance used by most staff, but it should not be placed in, or form part of, any changing area. Wherever installed, the clocking-in point requires its own waiting space to avoid congestion in main corridors.

Assessment of requirements

1.30 It is very important to assess as accurately as possible the number of places required and account must be taken of all staff likely to require the facilities. Care must be taken to ensure that there is no duplication with local facilities. Paragraphs 1.31 – 1.37 below set out the main factors which must be taken into account when assessing requirements. This is followed in paragraphs 1.38 – 1.40 by a detailed explanation of the method to be adopted in making the assessment.

Basis of assessment

1.31 The basis for assessing requirements should be the total number of staff requiring to use the changing facilities, which include uniform and personal clothes storage, irrespective of whether those staff are employed on a whole or part-time basis. The assessment is based on the place which, as indicated in paragraph 1.7, equates to

one member of the staff either whole or part-time who requires to use all these facilities and for whom no similar provision has been made elsewhere.

1.32 Where other staff require the use of central uniform storage facilities only, because they have local changing or for some other reason, a further assessment will be required of the staff involved and the number of uniforms for which additional storage space will be required. (See also paragraphs 4.4 and 4.13).

Resident staff

1.33 The extent to which changing areas will be used by staff occupying residential accommodation will need to be decided at local level in the light of the particular circumstances applying at individual hospitals, such as the distance of the residence from the resident's place of work. Where resident staff change in their residence the number will not normally be included in the calculation for changing spaces; they will require facilities for hanging up clothes and secure storage for handbags and other belongings at their place of work. In addition, provision must be made for the issue of uniforms to them, whether from the central uniform issue point or elsewhere.

Part-time staff

1.34 Full account should be taken of the number of part-time staff. An underestimate of their number may result in shortages of space and clothes storage facilities in centralised accommodation. The ratio of full-time to part-time staff must be determined at local level. It is not possible to provide national guidance as the proportion of part-time staff in a hospital is determined predominantly by local factors such as:

a. the location of the hospital in relation to public transport and to the availability of car parking;

b. local housing developments and the extent of hospital staff accommodation;

c. local schooling;

d. alternative local employment.

The ratio of full-time to part-time staff will also vary according to the category of staff – eg a large proportion of domestic staff may be part-time. Separate calculations of ratios should be made at local level for female and male staff.

Ratio of female to male staff

1.35 Analysis of staff returns for DGHs shows that for the purpose of calculating the proportion of places required by each sex in the central changing area an overal ratio of 85 female to 15 male staff may generally be expected. However, an assessment must be made locally; the ratio may vary depending upon the extent of departmental facilities provided, the type of hospital and other local factors.

Peak usage factor and sanitary facilities

1.36 It is estimated that the maximum number of staff likely to use central changing facilities at any one time is approximately 20% of the total number of users. This is the peak usage factor and represents the peak load: it is important when considering the sanitary facilities required for central accommodation. This peak figure, which is considered by the Department as a reasonable guide for use in planning, is related to:

a. the average number of staff on duty at any one time;

b. any shift overlap;

c. the rate of entry to and egress from the changing accommodation;

d. the length of time spent changing;

e. the number of hours worked by each employee.

1.37 The percentage should be applied to the number of places assessed for changing to calculate the number of staff for whom sanitary provision is required. It is emphasised that all the staff represented by the total number of changing places will not use the central changing areas at the same time and therefore for lengthy periods the space will be relatively unused. There will also be sanitary provision for staff within their own working areas or departments in the hospital. The sanitary facilities provided centrally should therefore be related to the number of staff likely to use the central changing area during peak periods which can be up to about 30 minutes depending upon local patterns for shift working and upon the local ratio of female to male staff. Because of these factors the number of WCs provided can be lower than the ratios given in the Sanitary Conveniences Regulations 1964 which cover staff employed in their work area. (2.57 – 2.63)

Method of assessment

1.38 Calculations are required for (a) the number of places needed for the central storage and issue of uniforms, (b) the number of places needed for the central storage of clothes and for changing, and (c) the amount of sanitary provision.

1.39 Using information from official records, local staff returns and other sources it will be necessary to assess for the project:

a. the total number of full-time staff;

b. the total full-time staff not requiring uniforms;

c. the number of staff for whom local changing and/or uniform storage issue facilities will be provided;

d. the local ratio of full-time to part-time staff;

e. the local female to male staff ratio.

1.40 With this information the following calculations can be made:

a. *Estimate for uniform storage and issue*

i. Obtain total number of full-time staff.

ii. Deduct number of full-time staff not requiring uniforms and deduct from the remainder those not requiring central uniform storage/issue facilities.

iii. Apply the 85:15 (or locally assessed) female:male ratio to obtain division between females and males.

iv. Apply part-time ratio (see paragraph 1.34) to the resultant figure at a(iii) to obtain the total number of staff for whom uniform storage and issue provision will need to be made in central accommodation.

Because nursing and non-nursing staff will require different numbers of uniforms it will usually be necessary to break down the resultant figure at a(iv) into nursing and non-nursing in order to calculate the number of uniforms for which storage will be required. Account will also need to be taken of the requirements of those staff who are likely to require a replacement issue of clothing during a shift. Such numbers are likely to be small but this demand should not be overlooked particularly when an automated system is adopted.

b. *Estimate for clothes storage and changing*

i Obtain total number of full-time staff.

ii Deduct number of full-time staff for whom local changing facilities will be provided at nursing section (ward) level or at their place of work.

iii. Deduct the number of resident staff for whom no central facilities are required.

iv. Apply to the resultant figure the 85:15 (or locally assessed) female:male ratio to obtain division between females and males.

v. Apply the part-time ratio to the resultant figures to obtain the total number of staff requiring clothes storage and changing accommodation.

c. *Estimate of sanitary facilities*

Apply the peak usage factor percentage to the figures at b(v) above to assess the number of staff upon which to base the sanitary requirements.

WORKED EXAMPLE

Assume 750 places for central changing

Number of women @ 85% of 750 = 638
Number of men @ 15% of 750 = 112

Female provision
Peak number of women @ 20% of 638 = 128
Number of WCs for 128 women, referring to the table at paragraph 2.57 and interpolating between peak loads of 102 and 153, the number of WCs will be 5

Male provision
Peak number of men @ 20% of 112 = 22
Number of WCs for 22 men, referring to the table at paragraph 2.58 and interpolating between peak loads of 18 and 27, the number of WCs will be 2

The required number of other sanitary facilities can be similarly determined.

Planning sequence

1.41 The factors which influence planning are summarised in Figure 1.

Statutory requirements

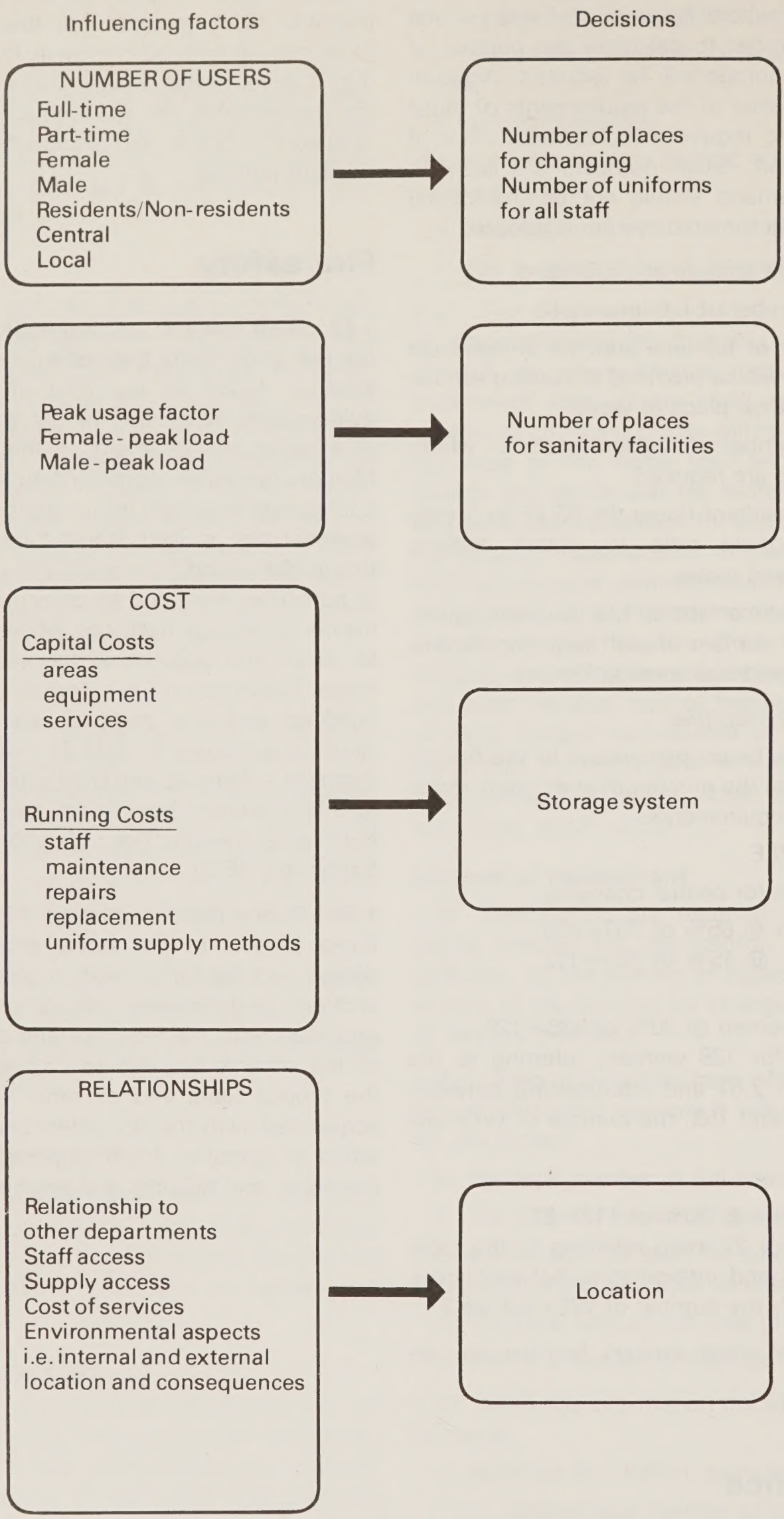
1.42 It is Government policy that health buildings should comply with the technical requirements of all relevant statutes and regulations even though the Crown need not always follow the procedural requirements of such legislation. Health buildings should also comply with all relevant codes of practice and standards. Whilst this guidance is compatible with the relevant statutory and other requirements currently in force at the time of writing, it nevertheless does not relieve health authorities of the responsibility for ensuring compliance with statutes, regulations, codes and standards at all stages in their building projects.

Fire safety

1.43 Staff changing accommodation can present a high fire risk and careful consideration should be given to its location. (1.25) At the time of writing, Departmental guidance on all aspects of fire safety is being prepared in a series of documents within the Health Technical Memoranda series, commencing at number 81 (although publication may not be in strict numerical order). It is essential that project teams familiarise themselves with this guidance and the statutory regulations on the subject. In particular, the need for structural fire precautions and means of escape from the whole accommodation must be taken into account at the earliest possible planning stage. Guidance on fire safety as it applies to new health buildings and new parts of health buildings (eg extensions) is contained in HTM 81 'Fire Safety in Health Care Premises – Planning and Design of New Buildings' (a draft of this document has already been circulated within the NHS under the title 'Fire Safety in Health Buildings' dated September 1978).

1.44 During the design stage it is important to establish those aspects of fire safety strategy which affect the design, configuration and structure of a project. The architect and engineer should discuss and verify their proposals with the local fire authority from the inception of the scheme through to completion, and ensure that the project team and all other planning staff are fully acquainted with the *fire safety strategy* for the design in terms of operation (staff responsibilities etc), equipment provision, and building and engineering layouts.

Figure 1 Planning sequence



2 Function and design

Introduction

2.1 This chapter enlarges upon the objectives, functional requirements and design implications of the accommodation described in Chapter 1. Activities, equipment, environmental conditions and finishes of walls, floors and ceilings are detailed in the Activity Space and Unit Data Sheets. This chapter provides guidance on:

Centralised accommodation

- Security
- Environment
- Storage and issue systems
- Organisation
- Design and functional requirements

Local facilities

- Local changing accommodation
- Limited facilities

Economy

2.2 The design of this accommodation must take account of the need for economy in all aspects including space provision, the good functional relationships of the staff changing facilities and the rest of the hospital, staff utilisation, energy consumption and maintenance, Whilst the overall capital expenditure must be kept in mind, it is equally important to ensure that all cost consequences of project decisions are fully considered. A booklet entitled 'Note on the relationship between planning health buildings and the cost of running them', issued in September 1980 with HN(80)29, (WHN(80)36 in Wales) should be of interest to design teams. The amount of space for a service or group of services should be no more than is currently needed. Planning should ensure that the spaces provided are not duplicated and that they are used as intensively as possible. Correct working relationships will help to facilitate encomy.

2.3 Materials and finishes should be selected to minimise maintenance costs (including cleaning costs) and be compatible with the functional and environmental requirements. Assemblies which require frequent redecoration or are difficult to service should be avoided. The design of components which are subject to heavy usage such as entrance doors, corners on partitions and counters should receive special consideration. In particular, floor finishes should be restricted in variety and, where soft floor coverings are specified, should have a backing impervious to fluids; reference should be made to HN(78)32 (WHN(78)92 in Wales) – Report of the Floor Covering Study Group.

Damage in health buildings

2.4 When designing and equipping health buildings, the likely occurrence and effects of accidental damage should be considered. In particular, damage in health buildings has increased through the use of heavier mechanical equipment for the movement of patients and supplies and, to some extent, by the use of lightweight, often less robust, building materials. Reference should be made at early design stage to the Common Activity Spaces HBN (in draft) for guidance on protection (especially of corridors), to the relevant British Standards and to the advice in the Department's DS (Supply) letter 42/75 dated 5 August 1975 about the buffering of movable equipment.

Health equipment note

2.5 Guidance on equipment for hospital accommodation for staff changing and uniform storage is contained in Health Equipment Note 41 which should be used in conjunction with this Note.

Central accommodation

Security

2.6 Security measures are important in staff changing accommodation particularly in view of the necessity to provide open access to the area for lengthy daily periods coupled with the large number of users. Hospital authorities will need to consider whether there is a need to provide regular patrols in the area by security officers.

2.7 The designer could usefully discuss his proposals for security with the officer in charge of the local Police Crime Prevention Department and, at the same time with a hospital or district security officer or adviser if one is employed by the Health District. Contact should be made early, preferably at the outline stage of the building design, at the same time that Fire and Safety Officers are consulted; this should enable an early resolution of the sometimes conflicting demands of security and fire safety.

2.8 In order to secure personal belongings in lockers, the users should provide their own padlocks and keys. Where a captive key locker system is in operation (2.25) it is important to ensure the security of the tokens and any spare keys. Automatic dispensers are secured by locked doors, the keys to which should be held by supervising staff.

2.9 Other secure store fittings comprise luggage lockers, stands for wet clothes and waterproof top clothing and crash helmet holders. They should be situated in the entrance area where they can be supervised from adjacent storage rooms. Keys for these fittings will normally be held by supervising staff.

Internal environment

2.10 The main priorities are adequate heating and ventilation to counteract the humidity and odours produced by wet and damp clothing and shoes. Natural ventilation and lighting can make a major contribution to energy conservation. Natural ventilation is usually caused by the effect of wind pressure. It can also occur to a lesser extent if there is a temperature difference between inside and outside the building and this particular pattern frequently predominates when the wind speed is low. Ventilation induced by wind pressure can promote high air change rates through cross-ventilation if air is able to migrate freely within the space from the windward to the leeward side of the building. Quite often, internal partitions, fire compartment walls and closed doorways can impede the flow path and when this happens the process will be restricted to a single-sided ventilation. However, even with this degree of obstruction, adequate ventilation can still be obtained without necessitating large window openings. Some types of windows, eg vertical sliding, can enhance single-sided air exchange by temperature difference and these will improve the overall rate of natural ventilation in protected or sheltered areas where the effect of wind is likely to be minimal. Guidance on the subject of ventilation is given in BS 5925 – a code of practice for design of buildings.

2.11 Deep-planning solutions may contribute to economy in space utilisation but the additional artificial lighting and mechanical ventilation requirements will add to both capital and running costs. Windows should be provided whenever possible for the benefit of staff who work within the centralised accommodation (but see also paragraph 1.25).

2.12 Finishes and fittings should be economical to maintain and capable of resisting the effects of heavy wear, possible vandalism and frequent cleaning. In the selection of floor coverings, ease of cleaning and the need to minimise the transfer of dirt and dust from outside should be considered and reference should be made to the Report of the Floor Covering Study Group issued to Health Authorities with HN(78)32 (WHN(78)92 in Wales) – see paragraph 2.3.

Smoking

2.13 It is for individual Health Authorities to make rules about smoking in health buildings under their control and management – see HC(77)3 dated March 1977 (WHC(77)5 dated March 1977 in Wales) but the general approach should be not to allow smoking except in specially designated areas. It is considered that smoking should not be allowed where changing takes place or where uniforms are stored. 'No smoking' areas should be clearly indicated. Where smoking may be allowed – in perhaps the entrance space – receptacles must be provided for the disposal of used smoking materials and there should be adequate ventilation.

Storage and Issue Systems

2.14 Storage is required for uniforms prior to issue to staff, and for personal belongings and outdoor clothing. All types of storage facilities must be reasonably secure. (2.6 – 2.9)

Uniform storage and issue

2.15 It is necessary initially to hold uniforms arriving in bulk from the laundry and then to accommodate them for issue to individual users. The two methods of storage considered in this guidance are;

a. a manual system using a room to store the uniforms as they arrive in bulk from the laundry. Spare uniforms may either be kept in the store for issue on a one to one basis or stored in users' individual lockers.

b. an automatic system whereby uniforms are stored in an automatic dispenser.

2.16 In the manual system a store is provided where uniforms are held for issue to all hospital staff. Uniforms will normally be delivered directly to the store on hangers on mobile clothing racks and space will be required to house these racks. If uniforms are delivered folded in packs, facilities will be required to store the folded uniforms on shelves and racks. Uniforms are issued over a counter to users as required.

2.17 When automatic uniform dispensers are used these also serve as the store for uniforms. The system is described fully in the Appendix. Automatic systems have the storage capacity for between 160 and 580 staff places with storage capacity related to the number of places and the number of spare uniforms held. This method of storage is normally linked with laundry deliveries on mobile clothing racks and a space will be required in which to hold empty clothing racks pending return to the laundry or clothing racks with uniforms etc awaiting loading into the dispensers.

2.18 With each system accessories such as caps can be made available on a suitably supervised self-service basis.

Storage of personal clothing

2.19 Personal clothing can be stored in lockers or by means of automatic systems. The paragraphs which follow give information on the types of systems available. Hanging basket systems which have been used in the past are generally labour intensive and are not now recommended.

Locker systems

2.20 A wide variety of shapes and sizes of locker systems is available either on central contract or from other commercial sources. It is essential that the type of locker provided is determined not only by staff changing policy

decisions but by references to anticipated developments in the laundry supply and distribution systems. Each user should be provided with a locker irrespective of whether they are full or part-time. Each locker may be required to accommodate personal clothing (including overcoats etc), spare uniforms (depending on policy), and other personal items. The height should be adequate to ensure that long coats do not drag on the floor.

2.21 All lockers should have means of natural ventilation in the form of slots or grilles. When clean uniforms are kept in the locker, contact with outdoor clothing also stored in the locker can be avoided by placing folded uniforms on the top shelf. An alternative would be the provision of full-length plastic bags to cover uniforms which could then hang with other clothing.

2.22 Lockers may be secured by keys or by the use of a padlock. The use of keys lays upon the hospital a duty to maintin a stock of spare keys and can pose security problems; it is therefore not recommended. The use of padlocks and keys provided by staff is the preferred method of security for both full-length and small personal lockers.

2.23 A carefully spread allocation of lockers will reduce over-crowding in the locker section during peak periods.

2.24 There will be a need for facilities to dry wet clothes in security and to store securely items which may be too large to be housed in the lockers. Space for these purposes should be made available away from the locker area, preferably in the entrance to the changing accommodation.

Captive key system

2.25 A recent development in the field of locker systems involves the use of a captive key system, operating in conjunction with the automatic uniform dispenser. (2.17) The hanger on which the uniform is dispensed from the machine carries a metal token. With this token, the user may release the captive key in any full-length locker. Without a token, lockers cannot be operated. When clothing has been placed in the locker, the token is inserted into the locker and the door is closed. The door may now be locked and the key withdrawn, as the token has released the key. Each key has a numbered tag which identifies the appropriate locker. When the locker is unlocked, the token drops into a coin box. The locker cannot be re-locked until another token is inserted by the next user. At regular intervals, tokens are collected from open lockers and re-hung in the automatic dispenser.

2.26 This is a relatively new system and, at the time of writing, has only been adopted by a few authorities. It has not therefore been possible to carry out a full evaluation. The advantages of the system appear to be:

a. that some saving in space in the locker room and therefore in building costs should be possible as staff do not need to be allocated a personal full-length locker: they simply use any available empty one. This saving in space could possibly be as much as 50% – 60%, but this will depend very largely on local circumstances;

b. staff who are absent on leave or attachement are discouraged from retaining a locker, which would otherwise create artificial shortages;

c. arrangements for the cleaning of lockers are simplified because lockers which are not in use are left open and available for cleaning;

d. it could be a particularly attractive solution in an upgrading situation where space is at a premium.

2.27 However, it should be remembered that this system will not operate satisfactorily if management control of the collection of tokens and their security is ineffective: good management is of paramount importance to its success. Further, any savings in building costs must be balanced against the increased equipment costs and the fact that the more intensive use of lockers may require their more frequent replacement.

2.28 Authorities will need to bear all these points in mind when considering whether to adopt this system and it may be useful for project teams to visit hospitals where it is already in operation before coming to a decision. Where possible, the views of users' representatives (staff committees, trade unions etc) should also be sought.

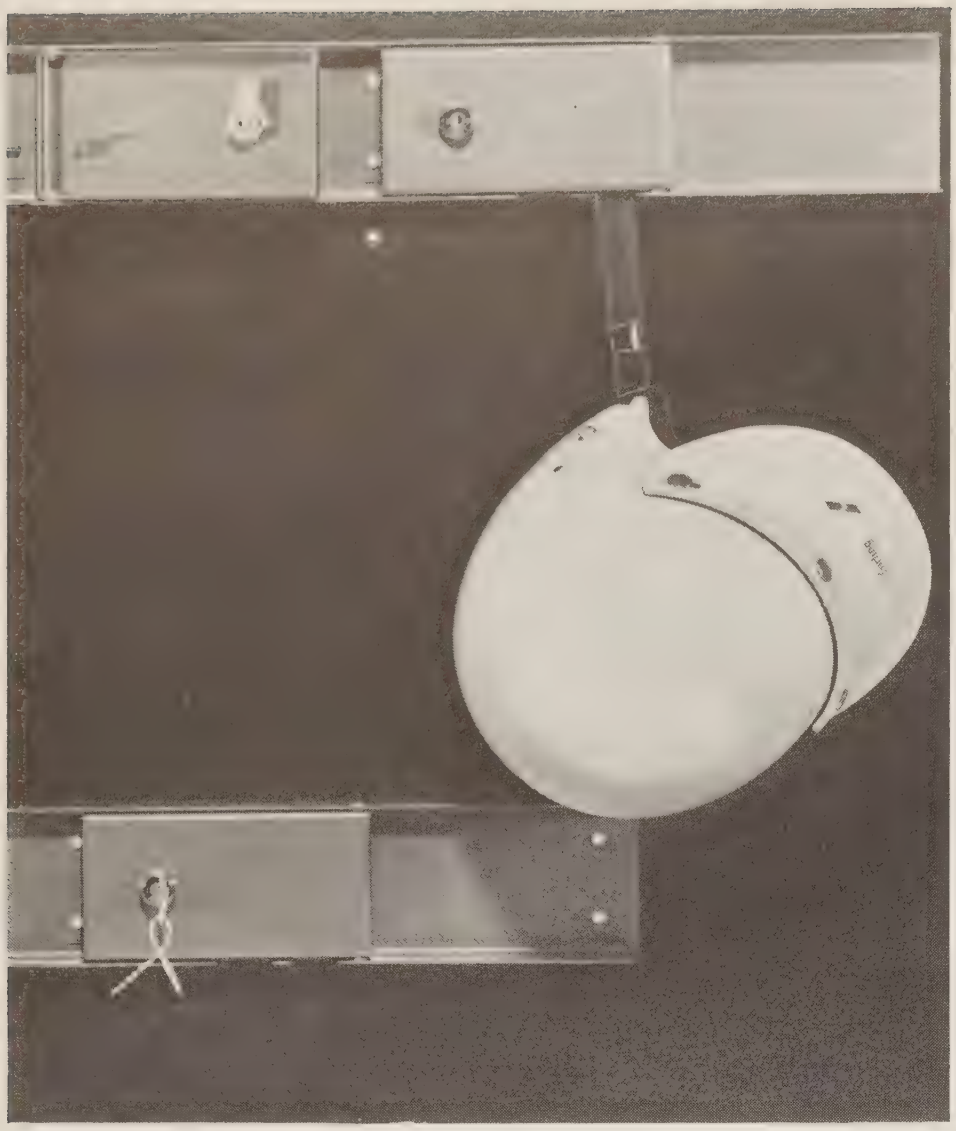
2.29 A small personal cube locker will still be required for each member of staff at their place of work for the storage of small personal items.

2.30 The size of the full-length captive key lockers should be the same as that recommended for traditional lockers. At the time of writing, these are only available to specific order. Information about contracts for lockers can be obtained from:-

South Western RHA
Supplies Branch
UTF House
26 King Square
BRISTOL
BS2 8HY
Tel: 0272 423271

Automatic systems

2.31 The automatic uniform storage system mentioned in paragraph 2.17 has been extended to enable personal clothing to be stored within the same machine and to be retrieved automatically. Having drawn their clean uniform(s) from the automatic uniform dispenser and changed, staff place their clothing into a plastic wardrobe bag which, with their top coat, will be placed on to the deposit rail of the dispenser. Central changing room staff will then sort these on to numbered dispensing positions (in the same way as they do for the uniform) for later retrieval by staff using a card similar to that used for uniform issue. The Appendix provides a description of the system. Damp clothing can be placed in the automatic system where it will dry. However separate facilities as for the locker system will be needed for drying very wet clothes. Personal clothing should be separated from uniforms within the same dispenser.



Holders for crash helmets

2.32 Separate storage facilities will be required for small personal items in appropriate naturally ventilated lockers for all staff using the automated system. Additional facilities similar to those indicated in para 2.31 will be required away from the dispenser for the secure storage of larger items such as motorcycle/scooter crash helmets which cannot be housed in the automated system or in the small lockers.

Other requirements

2.33 Both systems will require space to enable staff to change, changing cubicles for those requiring privacy, washing, grooming and toilet areas and limited shower provision. Dirty uniform collection points will be required.

Storage of uniforms on shelves

2.34 Facilities for uniform fitting and alterations will be needed. The location of an appropriate workroom is a matter for local decision but it could be located either with staff changing or with the laundry.

Organisation

2.35 It has been assumed for the purpose of this guidance that the uniform issue and staff changing area will function broadly as follows:

a. Uniforms will be processed and to a major extent sorted in the laundry and will be delivered, hanging on wire hangers on mobile racks or folded in packs, into the central uniform issue/clothes storage area.

b. Domestic staff responsible to the domestic supervisor will undertake the sorting of clean uniforms and will place them into the appropriate position in the automatic dispensers or on to racks or trolleys in the uniform store. Consideration will need to be given to the timing of this task in relation to nurses' shifts and to Bank Holiday periods.

c. Staff will collect their clean uniform from the automatic dispenser or uniform store and proceed to the central changing area or to their departmental local changing space.

d. With a manual system, spare uniforms may be kept in the store for issue on a one-to-one basis or placed in the full-length lockers provided for clothes storage. Local variations in collection procedures will of course occur. Personal items and outdoor clothing will be placed in the full-length lockers.

e. With an automatic system spare uniforms will be held in the dispenser.

Full-size lockers arranged to avoid long rows or banks

f. With the automatic clothes storage system small personal items will be placed in the personal lockers: clothing will be placed in the wardrobe bag and hung with any outer clothing on the deposit rail of the automatic dispenser.

g. Staff allocated for the duties mentioned at (b) will also sort the wardrobe bags and outer clothing into the appropriate positions within the automatic dispenser.

h. Items too large to be accommodated in lockers will be placed in secure luggage lockers within the entrance area.

j. Wet clothes will be housed on secure stands within the entrance area.

k. Dirty uniforms will be deposited in receptacles situated according to local requirements.

l. In addition, all staff using central staff changing will have facilities at their place of work for the secure storage of small personal items requiring ready access, eg handbags, wallets etc. (2.72 – 2.73)

m. Staff using local changing facilities will deposit personal items, outdoor clothing and spare uniforms (as appropriate) in full-length lockers provided within their working unit.

2.36 The level of staffing required will depend upon local circumstances, the type of system used, the extent of local facilities and the general pattern of shift working. It is assumed that ancillary staff will normally undertake the various sorting duties and the loading of dispenser positions probably to coincide with the main shift overlap times. When no allocated staff are working within the uniform issue/clothes storage space the supervisor or another member of the staff holding the key to the dispensers should be available to deal with any operational problems which may occur.

2.37 Figures 2 and 3 indicate user flow from arrival to departure for staff using central changing facilities and for those using local facilities at their place of work.

Automatic uniform dispenser

Inside view of automatic uniform dispenser

Removing uniform from automatic dispenser

Design and Functional Requirements

2.38 The general assumptions are that;

a. accommodation will comprise central secure storage for personal items and for outdoor clothing for each person requiring such facility;

Figure 2 Manual system

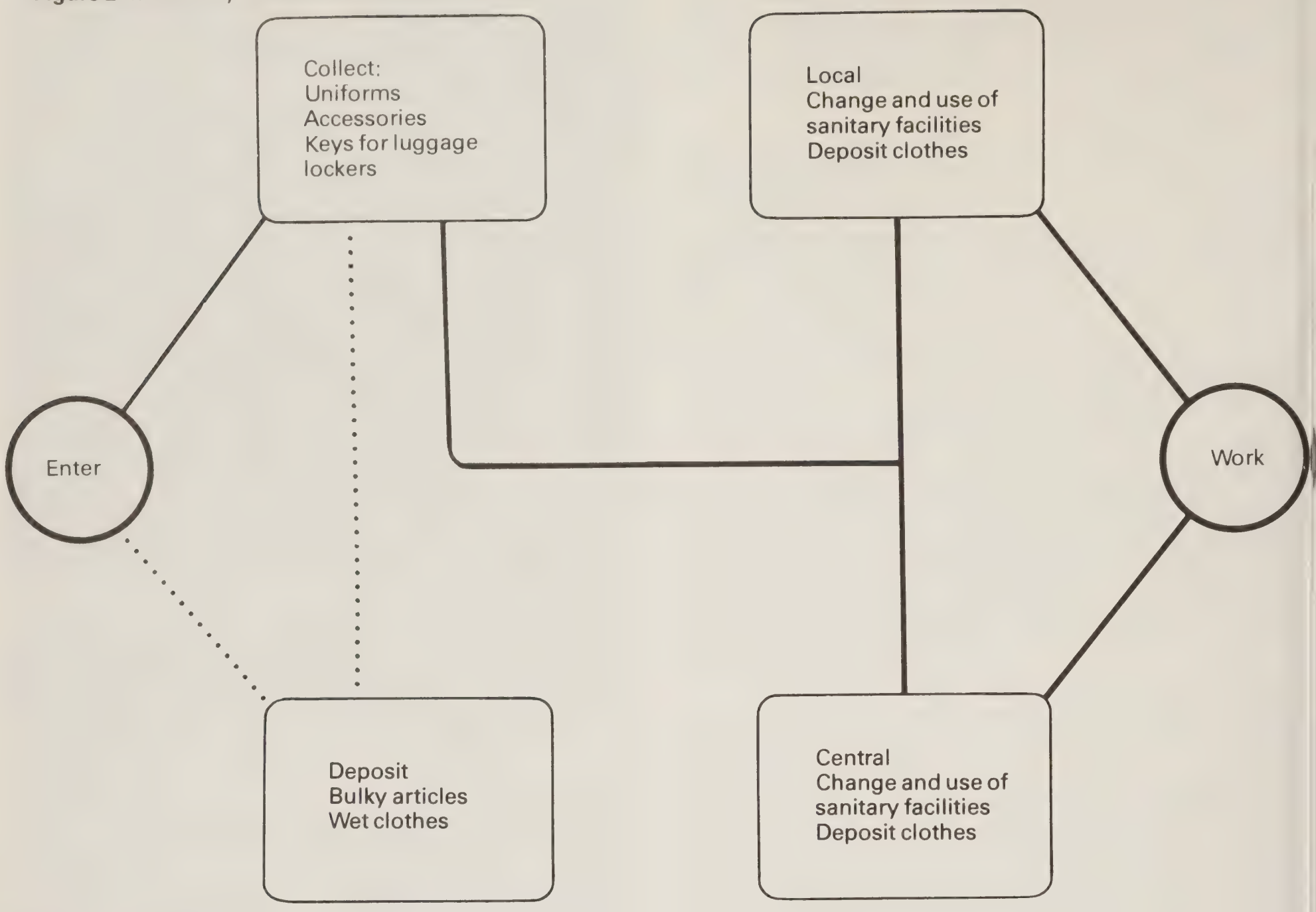
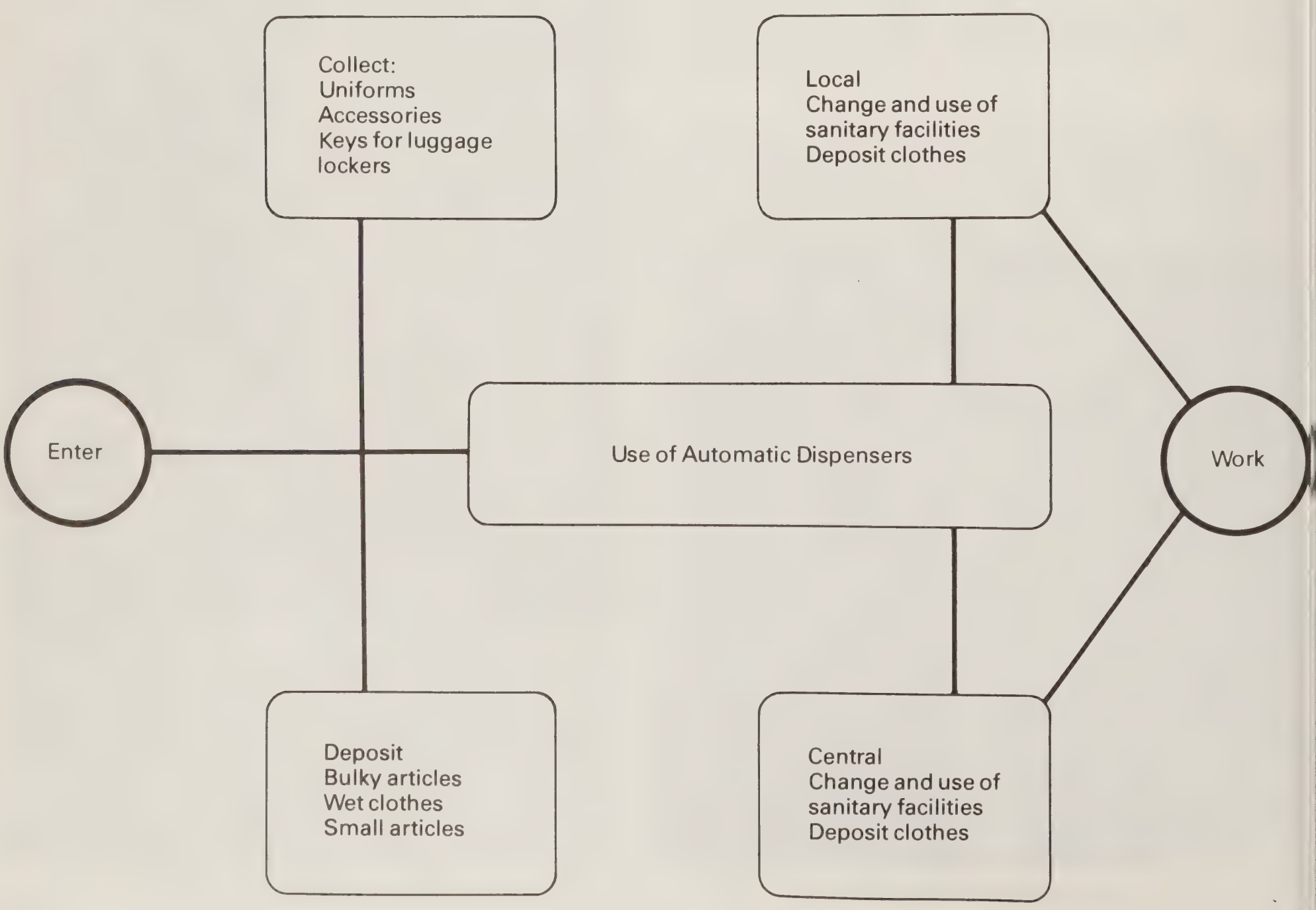


Figure 3 Automatic systems



b. there will be facilities available locally for the secure storage of small personal items;

c. staff using local facilities will change within their department or section;

d. there will be central storage and issue of uniforms for the majority of hospital staff;

e. there will be a proportion of 85 women to 15 men;

f. the peak usage will be 20% of the estimated users. (1.36)

Entrance

2.39 An entrance and reception area is required leading to the changing, uniform and clothes storage accommodation. It should house secure stands for wet garments, umbrellas and banks of luggage lockers for the secure storage of bulky items: both of these should be floor standing. Secure stands are fitted with a chain which threads through the garment sleeve before being padlocked to the rail. Luggage lockers should be in groups of four each measuring 1970 mm × 480 mm × 880 mm. There should also be wall-fixed secure holders for crash helmets. Space with chairs is required for waiting and where a notice board can be displayed.

2.40 The supervisor should be able to overlook the entrance space. Keys for the luggage lockers, secure stands and the helmet holders will be obtained from the supervisor. In view of the storage of wet clothes in the entrance area good ventilation is essential and a peripheral location is desirable.

2.41 The entrance area may also need to accommodate automatic uniform dispensers for the storage and issue of uniforms for;

a. those staff who will be changing at their place of work; or

b. when the dispenser is provided for joint use by both sexes eg, if small overall numbers of staff are involved such that it would be more economic for both sexes to have access to the same machine. (2.50)

Uniform and clothes storage with changing – manual system

Description

2.42 The manual system will comprise a uniform store, and separate changing areas for women and men with full-length lockers. The supervisor would be expected to be based within the uniform store.

Uniform store

2.43 A secure space is required for the storage and issue of clean uniforms: it should hold staff uniforms and accessories on shelves, racks or less often on mobile clothing racks or other fittings capable of storing uniforms on hangers. The store may need to hold the bulk of spare uniforms if these are not to be issued for storage in individual lockers. It should contain a desk and chair for the supervisor who should be able to oversee the entrance area. A counter is needed for the issue of uniforms and sundries to staff with adequate space in front of it for staff obtaining their uniforms. Secure storage is needed for keys and laundry records.

Changing areas

2.44 The separate changing spaces for women and men, designed to ensure privacy between the sexes, should be adjacent to the entrance and contain banks of full-size lockers measuring 1800 mm × 225 mm × 500 mm deep. They should be allocated on the basis of one per user. Lockers should have a high-level shelf for the storage of folded uniforms and be ventilated by means of slots or grilles.

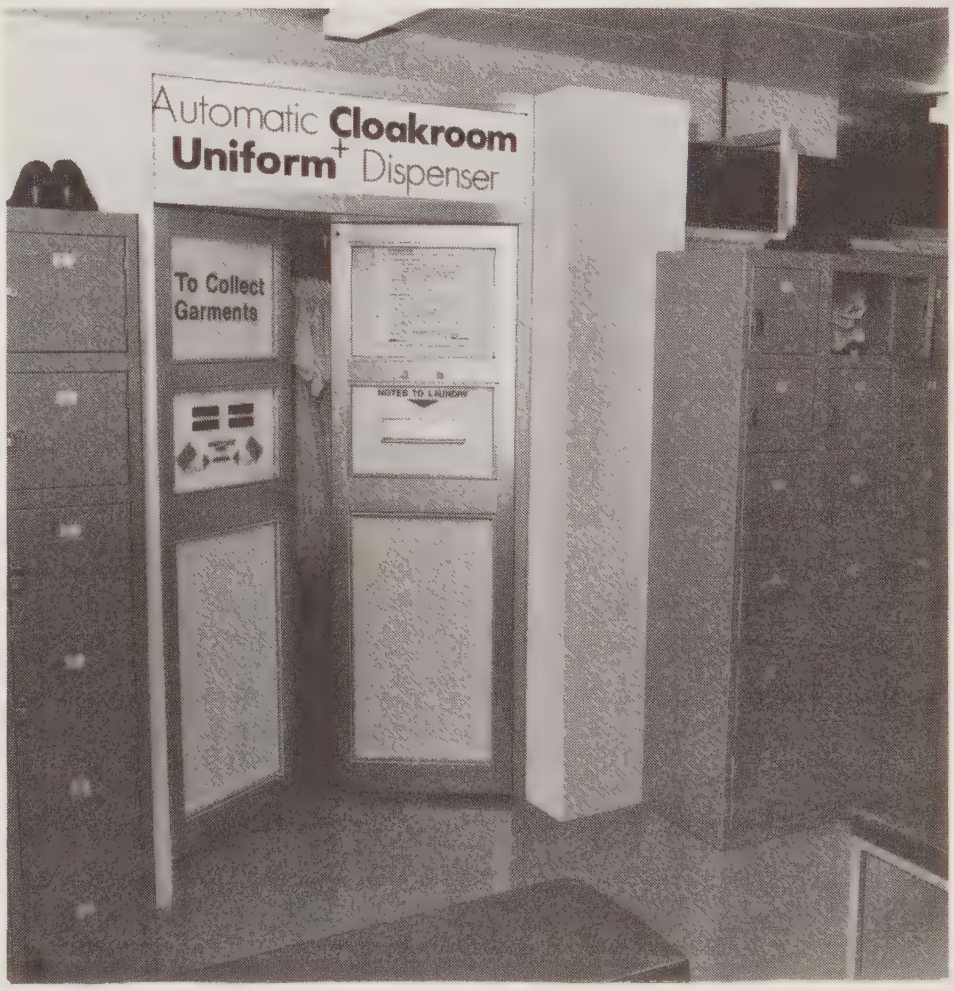
2.45 Long monotonous rows of lockers should be avoided. Lockers should be positioned so as to form a number of discrete areas for changing within the overall space. Cubicles will be required for those staff who wish to change in privacy. The open areas should contain chairs or benches and mirrors, the latter having an adjacent socket outlet at a height suitable for use with hair dryers.

2.46 The use of appropriate soft floor (carpet) finishes (2.3) will ease maintenance and enhance the overall appearance. Heating and natural ventilation is required and natural cross ventilation is desirable. Windows should have opening fan lights and permanent ventilation grilles.

Uniform and clothes storage with changing – semi automatic

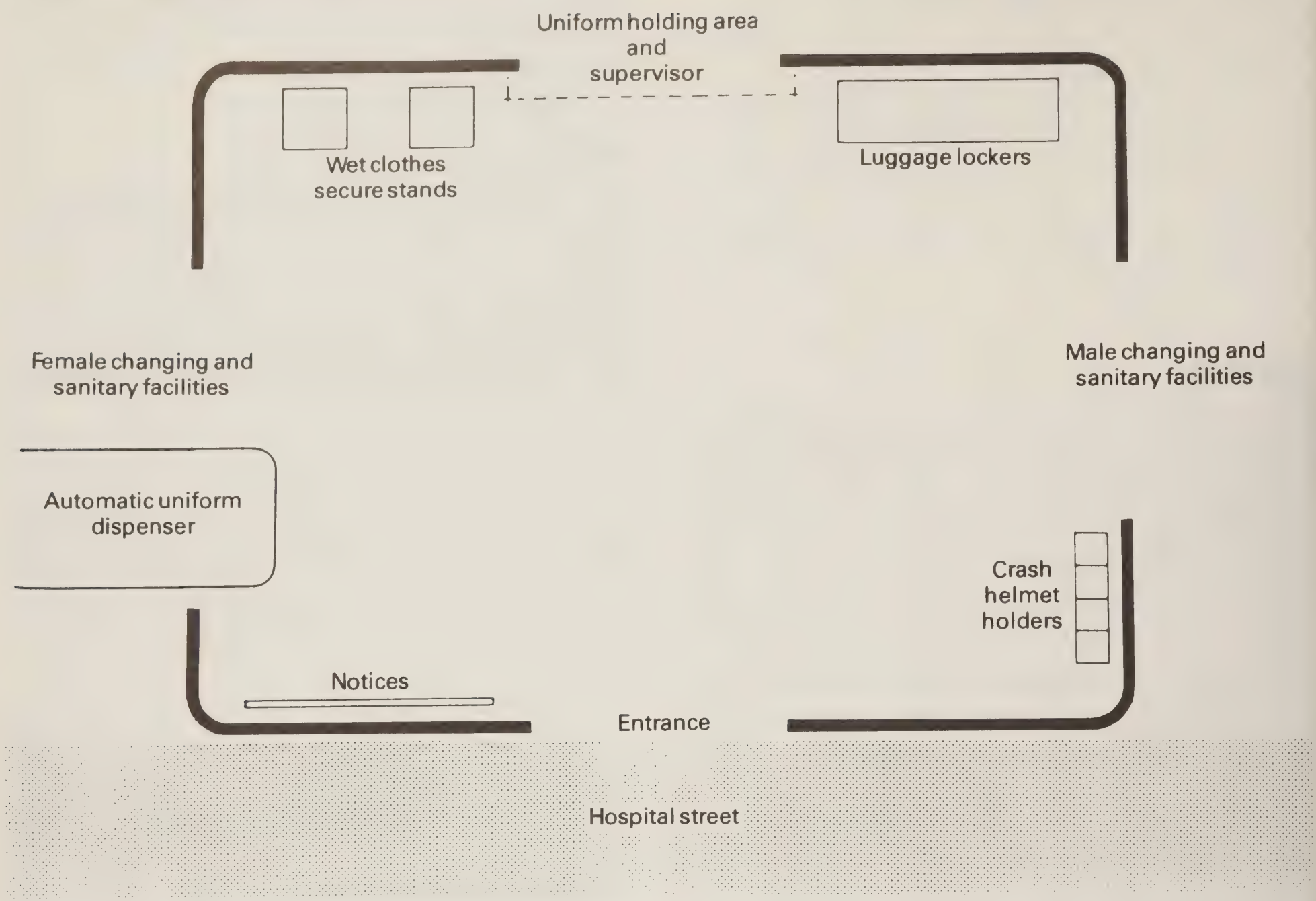
Description

2.47 The semi-automatic system will comprise automatic dispensers for the storage an issue of uniforms, and separate changing areas for women and men with full-length lockers. In addition there will be a room or space for the supervisor and for the temporary holding of clean clothing received from the laundry.



Personal lockers in conjunction with automatic uniform dispenser

Figure 4 Diagrammatic layout of entrance area



Supervisor and uniform holding

2.48 A room or space is required for the supervisor and for the temporary holding of uniforms on mobile trolleys after arrival from the laundry and prior to transfer into the automatic dispensers. It should oversee the entrance and contain a desk and chair for the supervisor. Secure storage is required for laundry records and keys, cards etc for the automatic dispenser. Uniform accessories will be stored in and issued from this point. A counter may be required.

Changing and uniform storage

2.49 The changing areas should be identical in all respects to those described in paragraphs 2.44 – 2.46.

Location and capacity of automatic dispensers

2.50 Whether or not the automatic dispenser(s) are sited within the changing areas or, perhaps, in the entrance will depend upon the number of users and upon the ratio of women to men. Where a small number of staff is involved (300) one small machine might be sufficient to serve both sexes and could be installed in the entrance to provide joint access. In a 600 place system one machine in the female changing area could serve the majority of female users and another perhaps smaller machine installed in the entrance with joint access for all male users and the remainder of female users. The objective at all times should be to avoid over provision; it is unlikely for example that the installation of a separate machine solely for male use in the male changing area would, in most cases, prove economic but this would need to be decided locally on the basis of the total staff involved and the locally assessed female to male ratio. Each project team will need to decide the size and numbers of dispensers to be provided for the number of places involved balancing the need for economy in provision against the need to avoid congestion and extensive queueing.

2.51 The amount of dispenser space required for a given number of staff is dependent upon the number of spare uniforms required to be stored which in turn is dependent on local policies and the frequency of laundry deliveries. The following table is given as a guide.

Table 1 Uniform Storage

Dispenser length in mm (Width 1750)	*No of users' slots with (average)*	
	3 uniforms	*4 uniforms*
4327	220	160
4995	280	200
5959	360	260
6627	420	300
7591	500	360
8259	560	400

Uniform and clothes storage with changing – fully automatic

Description

2.52 The fully automatic system will comprise automatic dispensers for the storage and issue of both uniforms and personal clothing and separate changing areas for women and men. Each area will also contain small personal lockers. (2.54) In addition there will be a room or space for the supervisor and the temporary holding of clean clothing received from the laundry.

Inserting top clothing into automatic dispenser

Supervisor and uniform holding

2.53 The requirements are identical to those described in paragraph 2.48 for the semi-automatic system.

Changing and storage space

2.54 Separate changing spaces should be provided for women and men, designed so that there is privacy between the sexes; they should be adjacent to the entrance. In addition to the automatic uniform and clothes dispensers (but see 2.56) they will contain small personal lockers measuring 450 mm × 300 mm × 450 mm allocated on the basis of one per user: the lockers should have natural ventilation. Lockers should be sited in banks to form open areas for staff changing. Cubicles will be required for those staff who wish to change in privacy. The open areas should contain chairs or benches and mirrors: the latter having an adjacent socket outlet at a height suitable for use with hair dryers. Heating, ventilation and finishes should be as described in paragraph 2.46.

2.55 At the time of writing only two sizes of automatic uniform and clothes dispensers are manufactured and an indication of their capacity is given in Table 2.

Table 2 Uniform and Personal Clothing Storage

Dispenser length in mm	*No of users' slots with 3 uniforms and 1 set of personal clothing*
5959	150
7591	210

NOTE: Overall width of automatic dispensers for uniform and personal clothing storage is greater than for uniform storage alone. Dimensions are liable to change and should be checked with the manufacturer. At time of writing (1983), width = 2436 mm.

2.56 Assuming the average female to male ratio, it will be apparent that provision of a fully automatic system for men is unlikely to be economic unless the combined requirements are in excess of about 900 places. In cases where numbers of male staff are small they could be served either by a semi-automatic system or a manual system (uniforms being stored in the uniform holding area) with the provision of full-length lockers in the changing areas.

Work room, with facilities for alterations and repairs

Sanitary facilities and cubicles

Female

2.57 The sanitary facilities for women should be adjacent to and directly accessible from the female changing area and should contain WCs (one should be suitable for a wheelchair user (2.59)), wash-hand basins, changing cubicles and showers. The suggested scale of provision is as follows:

Table 3 Sanitary Facilities

Changing places	*% Female 85*	*Peak load (20%)*	*WCs**	*Changing cubicles*	*Wash-hand basins*	*Shower cubicles*
300	255	51	3	2	4	2
600	510	102	4	3	5	2
900	765	153	5	4	6	3
1200	1020	204	6	4	7	4

*One WC should be suitable for wheelchair users.

For the purpose of this guidance it is assumed that sanitary towels will be collected from bins for local incineration, though authorities can make alternative arrangements which are known to be effective and economic.

Male

2.58 The sanitary provision for men should open off the male changing area and should contain WCs, wash-hand basins, changing cubicles and showers. The suggested scale of provision is as follows:

Table 4 Sanitary Facilities

Changing places	*% male 15*	*Peak load (20%)*	*WCs**	*Changing cubicles*	*Wash-hand basins*	*Shower cubicles*
300	45	9	2	1	2	1
600	90	18	2	1	2	1
900	135	27	2	1	3	1
1200	180	36	3	2	3	2

*One WC should be suitable for wheelchair users.

General points

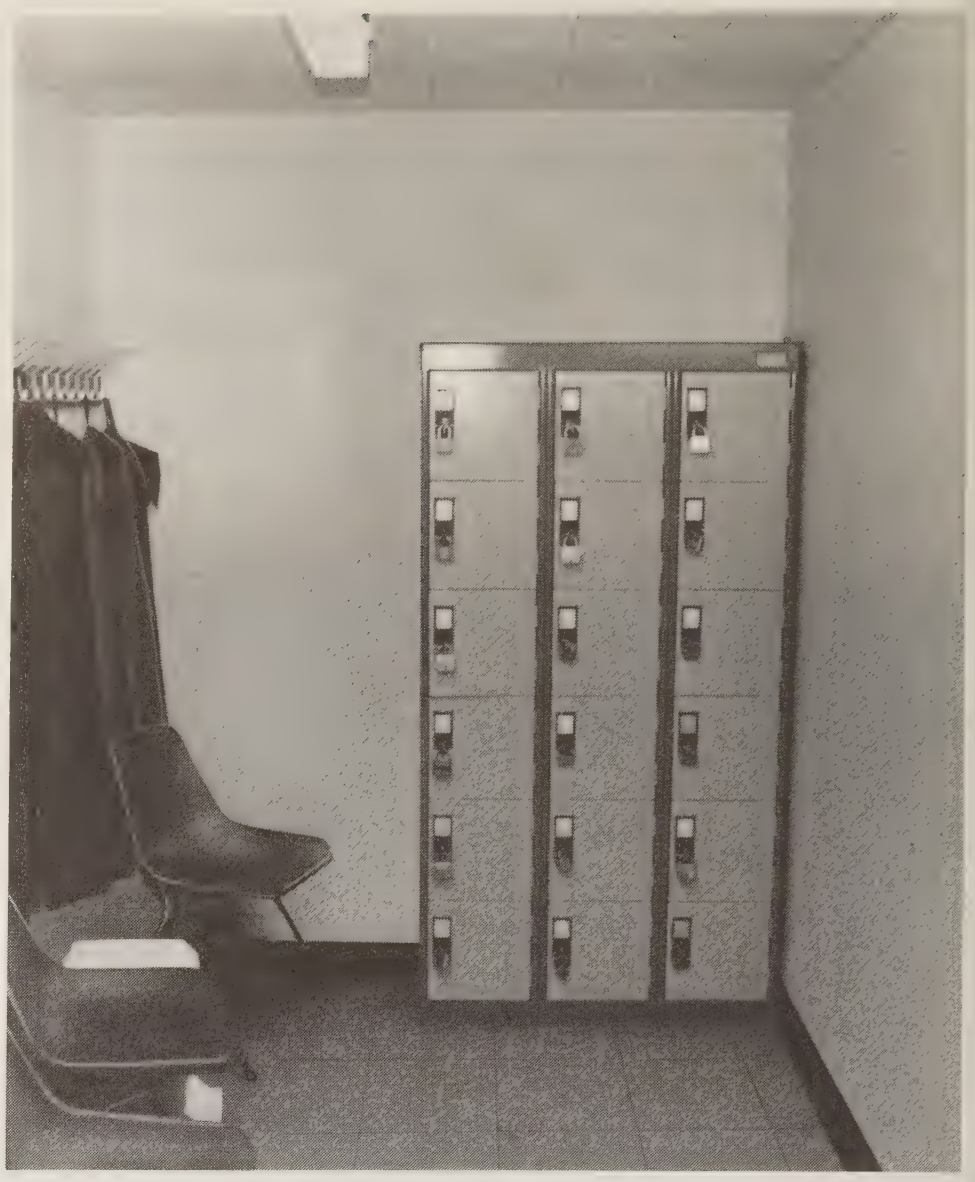
2.59 It is important to ensure ease of access to wheelchair WCs. Authorities may wish to consider siting the wheelchair WCs in a position opening off the main circulation area rather than in the female/male toilet areas. This would ensure easy accessibility and could improve utilisation – but such an option would have to be weighed against the possibility that this could reduce the provision in the main toilet areas to an unacceptable level.

2.60 Individual showers, each with its own drying space, should be provided. The shower unit should have an adjustable height hand spray. The drying space should contain clothes hooks, a shelf and a tip-up seat. Both the shower and the drying areas should be screened by curtains.

2.61 To avoid maintenance problems, mirrors should not be placed immediately above hand basins. However, in the male sanitary area, at least one mirror should be provided above a wash basin for wet shaving.

2.62 Electric shaver socket outlets should be provided in the male area on the basis of one socket for smaller units and two for larger units.

2.63 The environmental requirements of the Offices, Shops and Railway Premises Act 1963 will apply to sanitary facilities within changing areas. The number of fittings etc will be assessed on the basis indicated in paragraphs 1.36, 1.37.



Personal lockers on wards

Dirty uniform collection points

2.64 Space is required where dirty uniforms skips can be parked. Preferably they should be sited adjacent to the uniform storage provision or at the exit from the changing areas.

Cleaners' room

2.65 A cleaners' room should be provided similar to the Cleaners' Space General described in the Common Activity Spaces building note.

Switchroom

2.66 A switchroom to house the isolator and distribution fuse-gear will be required at a central location within the accommodation. The room should be kept dry and well ventilated and the door should be lockable and open outwards. If a medium voltage electricity supply of adequate capacity is available from an existing switchroom, then sub-distribution cupboards of an equivalent area will be required.

Sewing room

2.67 Where it is decided locally that a work room is required in association with the staff changing accommodation in which to carry out uniform fittings, (2.34) the room will need to have facilities for alterations and emergency repairs to clothing. Workspace for a seamstress, a changing cubicle, and full-length standing mirror will be required.

2.68 The extent to which any uniform fitting service can be associated with linen repair requirements should be considered. However, there should be no duplication with any facilities provided within the linen repair room of any on-site laundry – see Health Building Note 25, Laundry.

Local Facilities

Local Changing Accommodation

2.69 When full changing facilities are required for nurses and other staff on nursing sections, provision should be made for the secure storage of outdoor clothing and personal items and for the temporary storage of damp clothes. It is assumed that, when appropriate, uniforms etc will be collected from a central point ie a manned uniform store or an automatic dispenser. It may be appropriate for two or more nursing sections to share local changing accommodation in order to achieve some economy of space.

2.70 The accommodation for female staff should comprise:

a. full-length lockers for the storage of personal clothing, uniforms and personal items;

b. space for changing and a curtained cubicle for those requiring privacy;

c. provision for the temporary (secure) hanging of wet coats or cloaks.

The extent to which similar separate accommodation for men will be necessary will depend upon the number of male staff employed and the requirement to meet this need should be decided locally. A WC with wash-hand basin should be closely related with the changing space for general use by all staff. A further WC and wash-hand basin may be required when the accommodation is shared between more than one nursing section.

2.71 The provision for staff who are not employed on nursing sections and who require full facilities at their place of work should be similar to that described above. Some hospital departments such as operating and pathology need to have their own staff changing facilities because of the nature of the work or for other reasons. Detailed requirements for such departments will be found in the appropriate health building note.

Limited Facilities

2.72 Where staff employed on nursing sections use central changing facilities a small cloakroom should be provided on the nursing section for staff to hang coats and cloaks and to keep personal items secure in small personal lockers. A WC with wash-hand basin should be closely related to the cloakroom area for general use by all staff. One or two spare lockers should be available for the use of visiting staff who are required to work on the nursing section temporarily.

2.73 Staff, other than those employed on nursing sections, who use central changing accommodation will also need some facilities at their work station for the secure storage of personal items. This could be provided by small personal security lockers suitably located within or near to their working area or base. Staff working in offices should be able to lock personal items etc in their desks: as such staff will not usually use central changing, coat-hanging provision will be needed within the office (information is provided in the Common Activity Spaces building note about coat-hanging in offices). Local requirements may indicate other or special solutions for individual staff needs eg a small semi or fully-enclosed space to house the personal security lockers.

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3 Engineering services

3.1 This chapter describes the engineering services contained within centralised staff changing accommodation and their integration with the engineering systems serving a whole site. (The engineering services for local changing facilities at departmental level are covered in the appropriate departmental HBNs.) Its purpose is not to inhibit the design solution but to acquaint the engineering members of the multi-disciplinary design team with the criteria adopted (in terms of material specification, design conditions and reference material) to meet the functional requirements.

3.2 Documents referred to by number viz[10] are listed at the end of the chapter. They are numbered in order of first appearance, repeated references retaining the same number.

Model specification

3.3 The library of standard specifications issued in the CS[1] series of engineering data sheets is currently being updated and will be re-issued as a model specification for engineering services in health care buildings. The cost allowance for the engineering services in each functional unit of this accommodation is based on qualities of material and workmanship described in the model specification.

Economy

3.4 Engineering services should be designed to obtain the optimum benefits from the capital invested. Where alternative design solutions are available their consequential capital and running costs should be compared using Present Worth techniques[2] due consideration being given to the need for access for the replacement of plant and equipment.

3.5 Where design solutions related to economic assessment are indicated the cost of energy at the point of use should be used; the magnitude of heat conversion and distribution losses, for buildings well dispersed on a site, can equal that of the useful energy consumed.

3.6 In the interests of energy management and where practicable, facilities should be provided at main intake points to this accommodation for the easy attachment of energy measuring equipment, eg meters, thermometers etc. Engineering Data Sheet DR6[3] describes recent developments in metering techniques.

Maximum demand

3.7 User demand on engineering services is often difficult to predict but experience indicates that services designed for simultaneous peak load conditions are seldom fully utilised in practice. The estimated maximum demand and storage requirement (where appropriate) for each engineering service in this accommodation will need to be assessed individually to take account of building shape, geographical location, operational policies and intensity of use. As a guide and for preliminary planning purposes only the following are the estimated peak demands for central changing accommodation providing a fully automatic system for 600 staff.

Table 5

Service	Typical Maximum Demand	Remarks
Heating, DHWs	70 kW	
Domestic hot water	0.45 litre/sec	Storage 1000 litre (2 hour recovery)
Cold water supply	0.70 litres/sec	
Ventilation (Extract)	0.36 m^3/sec	Clean and 'Dirty'
Electrical	8 kVA	Essential 2.5 kVA

Plant room

3.8 Recommended space requirements for mechanical, electrical and public health engineering services in health buildings are given in HTM23.[4] The information in this publication is specifically intended for use during the initial planning stages when precise dimensional details of plant are not available.

Activity data

3.9 User requirements, environmental conditions and equipment arrangements, as exemplified in the Activity Data Sheets, (Chapter 5) should be referred to when positioning service components and outlets.

3.10 The distribution of mechanical and electrical services to final points of use should be concealed wherever possible employing a ceiling void and a 200 mm wide perimeter zone under window sills. Heat emitters should be contained within the latter and critical dimensions should be taken from the boundary of this zone. For costing purposes the 200 mm band which includes the floor area occupied by minor vertical engineering ducts is included in the building circulation provision.

Safety

3.11 Section 6 of the Health and Safety at Work etc Act 1974[5] imposes statutory duties on all persons who design, manufacture, supply, install or erect "articles" for

use at work, to ensure as far as is reasonably practicable that such articles are safe and without risk to health when properly used. Engineering components eg pipework, terminals etc are covered by the term "articles" and thus these duties apply to the designers of engineering services for non-domestic buildings.

Fire safety

3.12 Design guidance relative to the fire safety requirements in new health buildings is given in HTM81.[6]* Technical information concerning the design and specification of fire detection and alarm systems is detailed in HTM82[7] which also replaces or modifies certain clauses of BS 5839[8] Part 1 to meet the needs of health care premises. More general advice on fire protection and the fire hazards in various hospital departments is given in HTM83.[9]

3.13 The design of the engineering services should accord with the recommendations in the above series of HTMs and the engineer should verify his proposals in accordance with the procedure described in paragraph 1.44.

Noise

3.14 Hospital Design Note 4[10] including its revisions[11] and Engineering Data Sheet DH1[12] are concerned with measures that can be taken to restrict the generation and transmission of noise in health care buildings. Although this accommodation is not considered to be noise-sensitive care is required to ensure that the level of noise generated within the department does not cause disturbance in patient areas.

Control access

3.15 The location of primary engineering distribution control and isolation devices should allow easy access from circulation rather than working areas and they should be protected against unauthorised use, eg concealing switchgear and fuse-boards in secure cupboards.

Mechanical services

3.16 The mechanical services for this accommodation include the provision of heating, ventilation, and hot and cold water systems. For cost allowance purposes the distribution of these services is deemed to commence at their point of entry into the accommodation (where isolation and facilities for the attachment of metering equipment should be provided) and includes pipework, fittings, controls and connections to equipment.

3.17 For environmental requirements in individual spaces reference should be made to the Activity Data Sheets. Recommended room temperatures, air change rates, hot water service temperatures etc are grouped under "Technical Design Data" on each 'A' sheet. The 'B' sheets give the disposition of engineering outlets for the activities described.

* In preparation

Heating

3.18 Space heating will be required continuously during the heating season and can be met by low pressure hot water radiators operating from the main heating system. These should normally be placed under windows and against exposed walls, with adequate space below to allow cleaning machinery to be used. Where a heater is located on an external wall, back insulation should be provided to limit the rate of heat transmission through the building fabric. Information regarding the construction of heat emitters including their mechanical and thermal characteristics, methods of mounting and fixing, variations in pipe connections, problems of cleaning and maintenance, means of manual control of output and aspects of safety are given in Engineering Data Sheet DN4.[13]

3.19 Occupation of this accommodation will be intermittent and therefore a single zone heating system will normally suffice. Where local overheating is likely to occur, eg solar gain, thermostatic radiator valves should be installed. These valves should be of robust construction and selected to match the temperature and pressure characteristics of the heating system. The thermostatic head incorporating a tamper-proof facility for presetting maximum and minimum room temperature should be controlled via a sensor located integrally or remotely, as appropriate.

3.20 Heat emitters should have a maximum touch temperature of 82°C and the flow temperature should normally be controlled via an external compensator. Where space is restricted or heat gains and/or losses are particularly variable consideration should be given to the provision of thermostatically controlled fan-convectors fitted with low-limit control.

Ventilation

3.21 Recommendations for the ventilation of individual spaces in this accommodation are shown on Activity Data 'A' Sheets. In general the accommodation should be naturally ventilated but mechanical ventilation will be required in some internal spaces if deep-planning solutions are unavoidable. Extract ventilation will be required in 'dirty' areas, eg sanitary facilities etc, irrespective of their location (internal or peripheral); a dual motor/fan unit with automatic changeover facility should be provided to ensure that these areas are always maintained at a negative pressure when the unit is in use. Extract terminal arrangements should be protected against back pressure from external wind effects and located to discharge well clear of air inlet points and windows. A locally controlled window/wall centrifugal extract fan should be installed in the wet clothing storage area to provide a nominal five air changes per hour.

3.22 Among the factors which affect natural ventilation are building orientation relative to local wind patterns and window design, the latter requiring collaboration between architects and engineers to ensure that the openable lights provide optimum seasonal ventilation without prejudicing security. Mechanical ventilation systems are expensive in terms of capital and running costs and planning solutions should be sought which minimise their need.

3.23 Air movement induced by mechanical ventilation should be from clean to dirty areas where these can be defined and diffusers and grilles should be located to encourage uniform air movement within the space. The design should allow for an adequate flow of air into any space having only mechanical extract using transfer grilles in doors or walls to connect such spaces to corridors. Such arrangements however should avoid the introduction of untempered air and should not prejudice the requirements of fire safety or privacy. If exceptionally a mechanical supply air system is required the fresh air must be filtered and warmed before being introduced through high level diffusers designed to avoid the creation of draughts.

3.24 Ventilation systems should include local controls and indicator lamps to confirm their operational status. Where the use of a system is on a regular daily pattern, a time-switch control with manual over-ride should be considered. For individual units, eg extract fans, the indicator may be located in the control switch. Where a system is provided for particular space the indicator should be in or immediately adjacent to that space and, in the case of a more general system of ventilation, the indicator should preferably be located at a staff base. Where manual controls are available for staff use they should be provided with labels clearly defining their function.

Hot, cold and drinking water services

3.25 The domestic hot water should be stored at a temperature of 60°C and distributed from a local calorifier installation at a temperature not less than 50°C.

3.26 Outlet fittings for wash-hand basins and sinks are shown on Activity Data 'B' sheets. A hand-operated thermostatic mixing valve should be provided for each shower.

3.27 Guidance concerning the design and installation of cold water supply pipework and distribution systems is given in HTM27.[14] For frost protection purposes and to prevent condensation staining the decorative finishes all cold water pipework, valves and flanges should be insulated and vapour sealed.

3.28 Where fully potable cold water systems are not provided a drinking water point should be provided in each washing area. The supply should be direct from the mains or from a protected tank.

Fire-fighting equipment

3.29 Fire-fighting equipment should consist of hose-reels and portable fire extinguishers, and should be positioned so that adequate cover is given to the whole interior of the department. Hose-reels, in accordance with BS 5036 Pt 1[15] and usually with 30 m of hose should be located so that the jet of water from the fully extended hose is capable of reaching every point on the floor area without interruption after due allowance is made for furniture and fittings. In addition to hose-reels 9-litre water extinguishers should be provided on the basis of one extinguisher per 200 m^2 of floor area with a minimum provision of two extinguishers per fire compartment. Carbon dioxide extinguishers should be provided to cover electrical risks but for other risks, eg ignited liquid or gas, either carbon dioxide or dry powder extinguishers are appropriate. Extinguishers should comply with BS 5423[16] and further guidance concerning their selection and use is given in HTM 81[6] referred to in paragraph 3.12.

Electrical services

3.30 The electrical installation will include main intake switchgear and wiring and equipment for lighting, power, and environmental plant. Extensions into the accommodation from the hospital central systems for telephones (conduits only) and fire alarms will also be required. These installations should comply in all respects with the current Regulations for Electrical Installations[17] and conform to the requirements of HTM 7.[18]

3.31 Reference should be made to the Activity Data Sheets for the recommended levels of internal illumination, disposition of outlets for power, telephones, fire alarms and clocks etc in individual spaces.

3.32 The point of entry for the electrical supply will be a departmental switchroom housing the main isolators and the main distribution equipment. The switchroom will also be the distribution centre for subsidiary electrical services and wherever possible all equipment should be mounted at a height to give easy access from a standing position. The switchroom should be located within the department so as to minimise the cost of the cabling required to serve the department.

Electrical installation

3.33 The electrical installation in occupied areas should be concealed using PVC insulated cable in screwed steel conduit or trunking. Wiring ways for the telephone system should also be concealed wherever possible.

Electrical interference

3.34 Guidance concerning the avoidance and abatement of electrical interference is given in HTM 14[19] and switch-start fluorescent luminaires (lighting fittings) should comply with BS 5394.[20]

Lighting

3.35 Practical methods of lighting the various functional spaces are contained in the CIBS Lighting Guide[21] and the choice of luminaire should take account of the requirements of light distribution and visual comfort appropriate to the space. Luminaires should be of a type which can be easily cleaned and maintained. Their location should be readily accessible for lamp changing and maintenance, but with the over-riding requirement that the required standard of illumination is provided at the point of activity. Luminaires using fluorescent lamps should be installed when artifical lighting is required for long periods. Tungsten or compact fluorescent lamps will normally be required only for intermittently used luminaires or where shower, WC or changing cubicle partitioning is taken to ceiling height. For further information concerning standard refer-

ence luminaires for use in health care buildings, see Engineering Data Sheet DE 1[22]

3.36 Control of lighting is normally by local switches and these should be provided in sufficient numbers to allow variation in lighting intensity eg reduced levels of illumination when circumstances permit, and to encourage energy conservation. This is particularly relevant in rooms where, because daylight is restricted, supplementary artificial lighting is required for long periods in areas remote from windows. Although Activity Data 'A' sheets often recommend higher standards of illumination for spaces that are deep-planned, excessive contrast with adjacent areas outside the hours of daylight should be avoided.

Socket-outlets

3.37 Sufficient 13 amp universal type switched, shuttered socket-outlets, connected to ring or spur circuits should be provided to allow all portable appliances likely to be used simultaneously to be individually supplied. Activity Data Sheets indicate specific locations for the outlets associated with individual activites; the installation of twin outlets should be considered where these activities occur in juxtaposition.

3.38 A purpose-designed multi-voltage outlet for electric shavers should be provided in the male changing area.

3.39 Domestic cleaning appliances with flexible leads 9 m long should be assumed and socket-outlets should be provided to enable such machines to operate over the whole area of the accommodation.

3.40 Permanently connected appliances rated up to 13 amps should be supplied from double pole switched spur boxes, fused as required. Appliances rated in excess of this load, or those requiring a three-phase supply, should be permanently connected to separate final circuits from fuse-boards and independently switched.

3.41 Switches or other means of isolation should be provided adjacent to electrical machinery and plant to ensure the safety of operators and maintenance staff.

3.42 Automatically operated equipment should be provided with indicator lights to show when the equipment is energised. Such indicators should be incorporated in the control panel of the apparatus, in the control switch, or in the outlet from which the apparatus derives its supply.

Emergency electrical supplies

3.43 Guidance concerning the provision of emergency electricity supplies is given in HTM 11.[23] In this accommodation a stand-by power supply to automatic garment dispensers and provision of stand-by lighting Grade (b) in circulation spaces and functional areas will normally suffice. Safety lighting in accordance with HTM 11[23] and BS 5266[24] should be provided on primary escape routes.

Wire way for telephones

3.44 Central telephone facilities for internal calls will normally be available and an extension from this sytem will serve this accommodation. External call facilities for the private use of staff will normally be available from coin-operated call boxes situated in public areas of the hospital.

Electric clocks

3.45 Clocks should operate in conjunction with a master clock system. If such a system is not available synchronous clocks should be installed using a common clock circuit suitable for future connection to a master system. The number of clocks provided should be kept to the minimum and they should be installed only where they can be viewed by a significant number of staff.

Fire alarm and detection system

3.46 A monitored open-circuit system with break-glass call points is recommended. Automatic smoke detectors should be provided in areas where clothing is stored on open hangers. The choice of detectors is a complex matter but is dealt with in the guidance already mentioned in paragraph 3.12. Audible alarms should be used throughout the accommodation but it should be noted that sound levels require checking for audibility after full occupancy of the buildings and after any automatic door detentes have been released. (HTM 82[7] Appendix 5)

Lightning protection

3.47 Protection against lightning should be provided in accordance with HTM 7[18] and HSE Data Sheet DB 2.[25]

Internal drainage

3.48 The primary objective is to provide an internal drainage system that uses the minimum of pipework and

a. remains water and air tight

b. remains free-flowing with the minimum of maintenance

c. is quiet in operation

3.49 General design guidance is given in the relevant British Standards and Codes of Practice including BS 5572 – formerly CP 304[26] and the current Building Regulations. Recommendations regarding spatial and access requirements for public health engineering services are given in HSE Data Sheet EA5.[27]

3.50 The gradient of branch drains should be uniform and adequate to convey the maximum discharge to the stack without blockage. Practical considerations such as available angles of bends/junctions and their assembly as well as spatial considerations usually limit the minimum gradient to about 1:50 (20 mm/m). For the larger pipes eg 100 mm diameter, flatter gradients can be used but require workmanship of a high standard if adequate self-cleansing flow is to be maintained. It is not envisaged that pipes larger than 100 mm diameter will be required within inter-floor or ground floor systems serving this accommodation.

3.51 The drainage system design should include adequate ventilation to relieve accumulation of foul air and to maintain the hydraulic performance of the system eg the integrity of trap water seals.

3.52 The materials specified for the drainage system in this accommodation will depend upon their location and the nature of the effluent being discharged. Although adequate for the drainage requirements UPVC may not always be acceptable to the fire officers and neither should it be installed above 'sensitive' areas eg Operating, ITU, X-Ray or Catering departments etc.

Engineering references

1. **Department of Health and Social Security**. Health service engineering data sheets CS 1 to CS 42. Standard Specifications and contract documents. London DHSS.

2. **Department of Health and Social Security**. Engineering Division. An introduction to Present Worth techniques (enclosure to DS 173/73). London, DHSS, 1972. 27pp. and Present Worth approach to decision taking. London, DHSS, 1973. 34pp.

3. **Department of Health and Social Security**. Metering of energy and water consumption services (DHSS Engineering Data Sheet DR 6) London, DHSS, 1980. 14pp.

4. **Department of Health and Social Security and Welsh Office**. Access and accommodation for engineering services (Health Technical Memorandum 23) London, HMSO, 1972. 36pp.

5. **Health and safety at work etc Act 1974**. HMSO, 1974. 116pp. (CL. 37)

6. **Department of Health and Social Security and Welsh Office**. Fire safety in health care premises—Planning and design of new buildings (Health Technical Memorandum 81) London, HMSO. (In preparation)

7. **Department of Health and Social Security and Welsh Office**. Fire safety in health care premises—Fire alarm and detection systems (Health Technical Memorandum 82) London, 1982, HMSO. 53pp.

8. **British Standards Institution.**. BS 5839: 1980. Fire Detection and Alarm Systems in Buildings; Part 1. Code of Practice for installation and servicing (Revision of CP 1019).

9. **Department of Health and Social Security and Welsh Office**. Fire safety in health care premises—General fire precautions (Health Technical Memorandum 83), London, 1982, HMSO. 26pp.

10. **Ministry of Health**. Noise control. (Hospital Design Note 4) London, HMSO, 1966. 20pp.

11. **Department of Health and Social Security**. Health services management—Hospital Design Note 4 (noise control): amendments to appendices II, IV and VIII. (HN(76)126) London, DHSS, 1976. i.2pp. (In Wales, WHN(77)1 refers).

12. **Department of Health and Social Security**. Noise and vibration (DHSS Engineering Data Sheet DH 1) London, DHSS, 1977. 24pp.

13. **Department of Health and Social Security**. Heat emitters (DHSS Engineering Data Sheet DN4) London, DHSS, 1978. 87pp.

14. **Department of Health and Social Security and Welsh Office**. Cold water supply: storage and mains distribution. (Health Technical Memorandum 27) London, HMSO, 1978. 74pp.

15. **British Standards Institution**. BS 5306. Code of Practice for fire extinguishing installations and equipment in premises. Part 1: 1976. Hydrant systems, hose-reels and foam inlets. 16pp.

16. **British Standards Institution**. BS 5423, 1977. Specification for portable fire extinguishers. 16pp.

17. **Institution of Electrical Engineers**. Regulations for electrical installations. 15th edition, IEE, 1981. 216pp.

18. **Department of Health and Social Security and Welsh Office**. Electrical services: supply and distribution. (Health Technical Memorandum 7) London, HMSO, 1977. 48pp.

19. **Ministry of Health**. Abatement of electrical interference. (Hospital Technical Memorandum 14) London, HMSO, 1965. 26pp.

20. **British Standards Institution**. BS 5394 part 1. Radiated interference limits and measurement for lighting fittings.

21. **Chartered Institution of Building Services**. Lighting Guide: hospitals and health care buildings. Publication No 12, CIBS. 1979. 80pp.

22. **Department of Health and Social Security**. Standard reference luminaires for hospital and health building use. (DHSS Engineering Data Sheet DE 1) London, DHSS, 1978 36pp.

23. **Department of Health and Social Security and Welsh Office**. Emergency electrical services. (Hospital Technical Memorandum 11) London, HMSO, 1974. 33pp.

24. **British Standards Institution**. BS 526 Part 1. Code of Practice for emergency lighting of premises.

25. **Department of Health and Social Security**. Lightning protection for hospitals (Hospital Service Engineering Data Sheet DB 2.1) London, DHSS, 1971. 15pp.

26. **British Standards Institution**. BS 5572 1978. Code of Practice for sanitary pipework (formerly CP 304). 56pp.

27. **Department of Health and Social Security**. Horizontal and vertical drainage—access and accommodation. (Hospital Service Engineering Data Sheet EA5) London, DHSS. 19pp.

4 Cost information

4.1 For all types of health buildings it is clearly of vital importance that building costs and running costs should be kept as low as possible consistent with acceptable standards. Within this general context building notes provide a synopsis of accommodation for health buildings which the Department, in conjunction with the National Health Service, recommends for the provision of a given service.

Cost allowance

4.2 To prepare the cost allowance for a scheme reference should be made to the current edition of Appendix 7 to Hospital Building Procedure Note 6—Capricode. The total cost allowance appropriate for any scheme is derived by aggregating the cost of the functional units in the particular scheme. An example is given in the Health Notice associated with this Note.

4.3 The cost allowance covers the building and the engineering guidance set out in this Note. The costing of the functional units assumes that they will be incorporated into a whole hospital to form a complete department.

4.4 The main functional unit in this Note is the "place". This equates to one member of staff, either whole-time or part-time, who requires facilities and for whom no similar provision has been made elsewhere. Cost allowances covering a range of 300 to 1200 places are provided for three systems:

a. a manual system

b. a semi-automatic system

c. a fully automatic system.

Schedules of activity spaces for each system are provided at the end of this Chapter.

Dimensions and areas

4.5 In determining spatial requirements, the essential factor is not the total area provided but the critical dimensions, ie those dimensions critical to the efficient functioning of the activities which are to be carried out. There are therefore no recommended areas associated with the schedules of activity spaces. To assist project teams in preparing detailed design solutions for the rooms and spaces, the Department has carried out studies to establish dimensional requirements in the form of critical dimensions. The results of these studies appear as ergonomic diagrams in the draft building note "Common Activity Spaces", which has been made available to Regional Health Authorities as a working document.

4.6 It is recognised that, for development planning and at the earliest stage of a departmental design, it may be convenient for designers to have data available which enables them to make approximate assessment of the sizes involved. For this reason the schedules of areas, prepared for the purpose of establishing the cost allowances, are included with the Health Notice promulgating the Departmental Cost Allowances for this Note. It is emphasised that the areas published do not represent recommended room sizes nor specific individual entitlements.

Central staff changing

4.7 The cost allowances have been established on the basis of the spaces listed in the schedules of activity spaces. The space provided for the uniform store/holding in both basic and optional allowances is based on the area required to store one uniform per member of staff per working day. It is assumed that additional uniforms will be held in lockers or automatic dispensers. Sanitary facilities and changing cubicles have been provided as set out in paragraphs 2.57 and 2.58.

Manual system

4.8 The manual system includes a uniform store for the storage of folded uniforms on shelves or racks. If bulk storage of uniforms is required within the uniform store then the optional allowance (4.13a) must be used. If uniforms are to be stored on hangers then the optional allowance (4.13b) must be included. Separate changing areas for men and women are provided with space for full length lockers.

Automatic systems

4.9 The semi-automatic system has separate changing areas for men and women with space for full length lockers. The fully automatic system also has separate changing areas but with space for small personal lockers. Both systems have an area for the temporary holding of uniforms on mobile trolleys after arrival from the laundry and prior to transfer into the automatic dispensers. The automatic uniform dispensers and clothes dispensers are group 3 equipment and their cost is not included in the Departmental Cost Allowances.

Local staff changing

4.10 Where staff using local changing facilities require central uniform issue, the optional allowance (4.13a) must be used.

4.11 The cost allowances associated with this Note relate only to central staff changing accommodation. The provision of local changing facilities will be covered in the appropriate building notes.

Essential complementary accommodation (ECA)

4.12 This comprises activity spaces which are essential to the running of the staff changing accommodation but which in certain circumstances may be available in a convenient location elsewhere, either in a new development or an existing building. The amount of ECA which will need to be provided as part of an individual project will therefore vary according to the extent of the provision available elsewhere. The ECA comprises two sizes of sewing room to accommodate either one or two seamstresses.

Options

4.13 Where appropriate, this Note draws attention to alternative ways of providing services or facilities. This information together with the cost implications will enable project teams to select the solution which is most suitable to their needs. The options which have been costed relate to central uniform storage and issue and are as follows:

a. the extra space required in the uniform store/holding and, where appropriate, for uniform dispensers for storing additional uniforms, eg for staff who change locally within their departments

i. manual system

ii. automatic systems

b. the additional space required in the uniform store of the manual system for storing uniforms on hangers.

Engineering

4.14 The costs allow for the provision of the necessary space for a heating zone adjacent to external walls and for small vertical ducts. This space is included in the schedule of areas for costing purposes as part of the circulation provision.

Engineering services

4.15 The following engineering services as described in the Engineering Chapter and exemplified in Activity Data are included in the cost allowance for this department. All engineering services are assumed to be conveniently available at the boundary of the department. With the exception of an electrical switchroom, plant rooms are excluded.

a. *Mechanical services*

Drinking and cold water services including hose-reel piping (storage tanks and hose-reels excluded).

LTHW radiator heating system with touch temperature not exceeding 82°C.

Domestic hot water supply at 60°C (storage excluded).

Extract ventilation system for sanitary facilities.

Local window/wall extract for wet clothing area.

Automatic controls for heating system and remote sensor thermostatic radiator valves where appropriate.

Thermal insulation for services to latest DHSS standards.

b. *Electrical services*

Departmental distribution switchboard.

General lighting as required by tasks.

Fluorescent, tungsten and emergency lighting fittings as appropriate.

Socket outlet and other power outlets for fixed and portable equipment.

Standby lighting from main hospital supply.

Telephone conduits only.

Impulse clocks.

Fire alarm system.

Schedule of activity spaces Manual system

Activity space	*Places*			
	300	*600*	*900*	*1200*
Basic accommodation	No.	No.	No.	No.
Entrance	1	1	1	1
Changing/locker room – female	1	1	1	1
Changing/locker room – male	1	1	1	1
Sanitary facilities* – female	1	1	1	1
Sanitary facilities* – male	1	1	1	1
Uniform store/supervisor	1	1	1	1
Cleaners' room	1	1	1	1
Electrical switchroom	1	1	1	1

*See Tables 3 and 4 on page 18

Schedule of activity spaces Semi automatic system

Activity space	*Places*			
	300	*600*	*900*	*1200*
Basic accommodation	No.	No.	No.	No.
Entrance	1	1	1	1
Changing/locker room – female	1	1	1	1
Changing/locker room – male	1	1	1	1
Sanitary facilities* – female	1	1	1	1
Sanitary facilities* – male	1	1	1	1
Uniform holding/supervisor	1	1	1	1
Cleaners' room	1	1	1	1
Electrical switchroom	1	1	1	1

*See Table 3 and 4 on page 18

Schedule of activity spaces Fully automatic system

Activity space	*Places*			
	300	*600*	*900*	*1200*
Basic accommodation	No.	No.	No.	No.
Entrance	1	1	1	1
Changing/locker room – female	1	1	1	1
Changing/locker room – male	1	1	1	1
Sanitary facilities* – female	1	1	1	1
Sanitary facilities* – male	1	1	1	1
Uniform holding/supervisor	1	1	1	1
Cleaners' room	1	1	1	1
Electrical switchroom	1	1	1	1

*See Table 3 and 4 on page 18

Essential complementary accommodation

Activity space	*1 Seamstress*	*2 Seamstresses*
	No.	No.
Sewing room	1	1

5 Activity data

5.1 The expression Activity Data refers to an information system developed to help project and design teams by defining the users' needs more precisely. This information constitutes the Activity Data Base, issued to Health Authorities in 1976, and comprises two types of information sheet: Activity Space Data sheets (known as 'A' sheets) and their supporting Activity Unit Data Sheets (known as 'B' sheets).

5.2 'A' sheets record in more detail than elsewhere in this Note each task or activity that is performed in a particular activity space (which may be a room, space, or bay) together with details of the environmental conditions and the technical data necessary to enable the activities to be performed. Each 'A' sheet also contains a list of the titles and code numbers of the relevant 'B' sheets which give, both in narrative text and in graphics to scale, equipment fitted or supplied as part of the building and engineering terminals which satisfy the required user activities.

5.3 Further information about the use and preparation of Activity Data can be found in the "Guide to 'A' and 'B' Activity Data Sheets and their use in Health Building Schemes" issued to Regional Health Authorities in England in June 1980 and to NHS Authorities in Wales in November 1980. Copies of the Guide are available from the Department's Directorate of Works Development, Branch Dev 1.1, Euston Tower, 286 Euston Road, London NW1 3DN.

Activity data applicable to this Note – Based on the 85:15 ratio of women to men and a peak usage ratio of 20%.

5.4 The 'A' and 'B' sheets recommended for the activity spaces described in this Note have been newly prepared or selected from existing sheets. Their code numbers and titles are provided on the lists which follow.

5.5 Further Activity Data sheets may be selected, or drawn up by project teams to their own requirements, for any services not described in the Note or included in the list. The Regional Activity Data Co-ordinator/Welsh Office will be able to advise about the selection and availability of activity data sheets. However, in order to ensure consistent and economic provision, variations from the 'A' sheets recommended for the spaces covered in this Note should be considered only where it has been decided that the function of a space will differ substantially from that described.

5.6 Activity Data sheets have not been produced for all the possible sizes of accommodation, as this would result in the duplication of sheets which were identical in content apart from the number of items of equipment etc provided. Where possible, 'A' sheets have been provided on the basis of one size only (usually 300); for the larger sizes the levels of provision are increased proportionately. Where this has not been practicable separate 'A' sheet have been provided. The table following the list of 'A' sheets shows how these would be applied for the range of sizes for each system.

List of Activity Data 'A' sheets Staff changing

Activity Spaces	*'A' Sheet Code No*	*Para No in Building Note*
Entrance	V0609	2.39 – 2.41
Entrance with Auto Issue	V0612	2.41
Female Changing Area (Manual System)	V0610	2.44 – 2.46
Male Changing Area (Manual System)	V0611	2.44 – 2.46
Female Changing Area with Auto Issue	V0613	2.49 – 2.50
Female Changing Area with Auto Issue and Storage (300 staff)	V0614	2.52 – 2.56
Male Changing Area with Auto Issue and Storage (900 staff)	V0615	2.52 – 2.56
Male Changing Area with Auto Issue and Storage (1200 staff)	V0616	2.52 – 2.56
Uniform Store (300 staff) Manual	W1003	2.42 – 2.43
Uniform Holding (300 – 600 staff) Auto System	W1004	2.48 and 2.53
Uniform Holding (900 – 1200 staff) Auto System	W1005	2.48 and 2.53
Sanitary Facilities – Female	V0117	2.57
Sanitary Facilities – Male	V0118	2.58
Cleaners' Room	Y1501	2.65
Switchroom	K0101	2.66
Sewing Room	V0508	2.67

ACTIVITY DATA 'A' SHEETS – SUMMARY OF APPLICATION TO EACH SYSTEM

AREA	MANUAL				SEMI-AUTOMATIC (DISPENSING)				FULLY AUTOMATIC (DISPENSING/CLOTHES STORAGE)			
	300	600	900	1200	300	600	900	1200	300	600	900	1200
Entrance	V0609	} Increase listed on V0609			V0609	} increase in proportion to numbers of staff			V0609 }	increase in proportion to numbers of staff		
					V0612	NB. With uniform dispenser increase in proportion to number of staff						
Female Changing	V0610	} increase listed on V0610			V0613	} increase in proportion to number of staff			V0614	} increase in proportion to number of staff		
Male Changing	V0611	} increase listed on V0611			NB. Uniform dispenser situated in Entrance (see V0612)				NB. Numbers unlikely to justify fully automatic provision. V0611 sized accordingly		V0615	V0616
					V0611	} increase in proportion to staff numbers						
Uniform Store/ Holding	W1003	increase listed on W1003			W1004	W1004	W1005	W1005	W1004	W1004	W1005	W1005
Sanitary Facilities F.	V0117	} increase as in Table 3 of HBN			V0117	} increase as in Table 3 of HBN			V0117	} increase as in Table 3 of HBN		
Sanitary Facilities M.	V0118	} increase as in Table 4 of HBN			V0118	} increase as in Table 4 of HBN			V0118	} increase as in Table 4 of HBN		
Sewing Room	V0508	V0508	Double activity units		V0508	V0508	Double activity units		V0508	V0508	Double activity units	
Cleaners' Room	Y1501	} sized accordingly			Y1501	} sized accordingly			Y1501	} sized accordingly		
Switchroom	K0101				K0101				K0101			

List of Activity Data 'B' sheets

'B' Sheet Code No		Activity and Title
A36CW	Rehabilitation	Sewing machine, electric
B01AA	Changing	Cubicle, staff
B01BD	..	Cubicle, dirty/clean
B04AU	Storage	Cupboard, double-door, 6 open shelves above, room divider
B14AU	Administration	Single pedestal desk, with chair
B27AU	Toilet	WC, staff, male
B27AV	..	WC, staff, female
B27BA	..	Personal washing
B27BD	..	Personal washing and showering, staff, non-residential
B27CU	..	Sanitary towel vending machine
B27EE	..	Shower, staff, without personal washing facilities
B43AA	Grooming	Mirror 600 × 300 mm, wall-mounted with shelf under
B51AM	Laundering	Ironing board, industrial
B63AA	Staff changing	Semi-automatic uniform issue, side entry
B63AB	..	Semi-automatic uniform issue, end entry
B63AC	.. ..	Fully automatic uniform issue
C01CF	Clothes storage	Locker, clothes, twin, 1800 × 450 × 500 mm
C01GE	.. ..	Locker, small, 4-tier, 1800 × 300 × 450 mm
C01GG	.. ..	Locker, luggage, 4-tier, 1970 × 480 × 880 mm
C01HB	.. ..	Stand, hat, coat and umbrella, 20 hangers, with security, 1675 × 1800 × 600 mm
C01HF	.. .	Rack, motor cycle helmet, lockable, three helmets
C03CB	Storage	2 hook, hat and coat
C04CA	Chairs	Upright, stacking
C04CB	..	Upright with arm, stacking
C09CI	Tables	710 × 1800 × 900 mm
C09HC		900 × 1200 × 900 mm with shelf and drawers
C17CA	Mirrors	Wall-mounted, 1500 × 400 mm
C17CB	..	Wall-mounted, 600 × 300 mm
C23CA	Document storage	Cabinet, filing, 2 drawer, 700 × 450 × 600 mm
C23CB	..	Cabinet, filing, 4 drawer, 1300 × 450 × 600 mm
C23DF	.. ..	Card index cabinet, 11 drawer, cards 76 × 127 mm
C31GE	Trolleys	Sided linen, single bag, BS 2854
C31GG	..	Clothes rack, double, mobile, 1800 × 1800 × 1000 mm
C32CC	Racking	Metal, 1 bay, 4 shelves, 1800 × 900 × 600 mm

SUGGESTED FURTHER READING

Department of Health and Social Security and Welsh Office

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Appendix

Automatic uniform and clothes storage and issue systems

This appendix explains in more detail than in the main text how automatic dispensers are used and managed.

General

1. A uniform and personal clothes storage and issue service can be provided by an automatic dispenser in which clean uniforms are stored on rails and into which personal clothing can be placed for storage. Machines can contain both uniforms and clothing or may house uniforms only.

2. Staff using machines are issued with a coded card which gives access electronically to the automated dispenser/storage system. The card is coded to give access to one uniform dispensing point and to one clothing storage point only.

Uniform issue

3. The coded card is inserted into the machine following the directions displayed for "uniform issue". The machine reads the card, selects the uniform appropriate to the code and delivers it, usually within 15 seconds, and returns the card to the user.

Cloakroom deposit

4. After changing, staff place their own indoor clothes into a personally issued numbered plastic wardrobe bag and hang it with outer garments on the deposit conveyor within the machine. All items deposited will be sorted to the appropriate numbered position by the staff allocated for these duties.

Cloakroom collection

5. When coming off duty the coded card is inserted in the machine following the directions for "cloakroom" use. The machine reads the card, selects the plastic wardrobe bag and any outer garments and delivers them usually within 15 seconds and returns the card to the user.

Loading uniforms

6. There is no need for an attendant to be present whilst uniforms are being issued or garments being deposited or collected from the system. The clean uniform section should be restocked as promptly as possible to ensure that a second clean uniform is available if required. It is assumed that clean uniforms will he held at an appropriate point within the changing accommodation after delivery from the laundry.

Repositioning cloakroom deposits

7. After restocking the uniform section the attendant should remove any items deposited on the cloakroom conveyor and reposition garments as identified by the identity tags to the appropriate numbered position in the cloakroom storage system.

Wet outdoor clothing

8. Damp outer garments may be put directly on to the deposit conveyor as middle garments are protected by plastic wardrobe bags – see paragraph 11. However very wet clothing will need to be dried in a separate space away from the automatic dispenser.

Uniform marking

9. The entire stock of uniforms should be indelibly marked to show the card number of all staff using the equipment. In hospitals where more than one dispenser is installed it is advisable to use a coloured marking tape to identify each installation, alternatively a prefix letter can be used when marking the numbers on uniforms.

Card issue

10. A coded card should be issued to each member of staff authorised to use the equipment and an index file established recording their name, card number etc.

Wardrobe bags

11. Two identity tags numbered to correspond with their coded cards need to be issued to each member of staff. One tag should be permanently attached to the zip fastener of the plastic wardrobe bag at the time of issue. The other is used for placing on the hanger when depositing outer garments.

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